Location Strategies of Multinationals from Emerging Countries in the EU Regions

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Abstract

This paper contributes to the current debate in both Economic Geography and International Business on the nature and strategies of Multinational Enterprises (MNEs) from emerging countries (EMNES). The paper fills a relevant gap in the existing literature by shedding new light on the location strategies of EMNEs at the national and regional level, looking at their investment drivers and systematically comparing them with those of multinationals from advanced countries (AMNEs).
The empirical analysis looks at the location choices of MNEs in the European Union (EU-25) regions and unveils that EMNEs follow distinctive location strategies. Their attraction into large regional markets is similar to AMNEs as well as their irresponsiveness to efficiency seeking motives. Conversely, the most knowledge-intensive investments of EMNEs respond mainly to two 'attraction' factors: strategic assets (in the form of local technological dynamism) and the agglomeration of foreign investments in the same business functions. In addition, both the national and the regional levels are simultaneously relevant to EMNEs decisions.

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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 global Foreign Direct Investments (FDIs) landscape. Outflows of FDIs from developing economies have reached the record level of $553 billion in 2013, corresponding to 39% of global FDI outflows, up from 16% in 2007 (UNCTAD, 2014). Multinational enterprises (MNEs) from emerging countries (EMNEs) have attracted a mounting interest in the academic literature. 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). 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 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.

Looking at the most recent waves of EMNEs investments in the 2000s, Narula (2010) suggests that they should be seen as an intermediate stage in the long-term evolution of MNEs' activities fostered by increased market liberalisations and greater cross-border competition. In this perspective EMNEs would progressively converge towards AMNEs in terms of their behaviour and strategies: over the past 30 years EMNEs have developed from 'infant' into 'adolescent' MNEs and they are currently in the process of evolving into fully 'mature' MNEs (Ramamurti, 2012). In contrast, other authors argue that the most recent 'third wave' of EMNEs investments show remarkable structural differences with no sign of 'convergence' towards the same 'model' (Mathews, 2006; Gammeltoft, 2008).

This paper aims to contribute to this on-going debate by shedding new light on one particular aspect of EMNEs strategies that remains significantly under-explored in the existing literature both in International Business Studies and Economic Geography (Dunning 2009): their location decisions at both the national and sub-national levels. The choice of appropriate locations for their subsidiaries is strictly related to the internalization motivations of MNEs (Belderbos et al, 2011; Dunning, 2009) and a systematic comparative analysis of the spatial location behaviour of EMNEs and AMNEs makes it possible to unveil similarities and differences in their investment motives comparing the

importance of national-level vs. regional characteristics. The purpose of paper is answering a set of fundamental questions linked to the location strategies and spatial behaviour of EMNEs: what are the characteristics of the destination areas that matter the most for EMNEs? Are these local attraction factors and behaviours different from the drivers of AMNEs' investments? Do EMNEs target primarily countries or specific regions/sub-national units?

In order to address these questions the paper bridges the Economic Geography and International Business Studies literature. The former has extensively studied the sub-national location strategies of MNEs by means of both qualitative and quantitative methods but has devoted very limited attention to EMNEs location. The latter has extensively debated the nature and strategies of EMNEs with no attention to the subnational dimension of location strategies. The empirical analysis systematically compares the location drivers of EMNEs and AMNEs investments 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 exercise: 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 state/country level and at the sub-national/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 investments drivers at the centre of the theoretical debate.

Overall, the innovative contribution of the paper to the existing literature is two-fold. First the paper offers a systematic comparative analysis of the similarities and differences among the location strategies of AMNEs and EMNEs. Second the paper provides an examination of the diverse role of national vs. regional factors

in these strategies that is also unexplored in the existing literature. The empirical results suggest that AMNEs and EMNEs search for a diverse set of drivers when investing in the EU regions: there is no 'general' common model for the behaviour of MNEs and EMNEs do display some relevant behavioural differences when compared to other Multinationals. While for market seeking investments EMNEs resemble their North American counterparts when it comes to strategic asset seeking investments EMNEs do follow a distinct logic in their location strategies. EMNEs are attracted by the availability of technological competences (i.e. patent intensity) only when their subsidiaries pursue more sophisticated and technology-intensive functions. The structural and socio-institutional pre-conditions for establishing fully functional regional systems of innovation - 'soft' factors in regional 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 investments in the same function 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. Section 3 explains 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 economic and international business theory 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). Beugelsdijk and Mudambi (2013) identify a significant limitation of the analysis of MNEs location choices in the almost exclusive national-level focus of the existing studies. Nowadays "*MNEs location decisions are becoming increasingly complex and dependent on the variety and quality of highly localized assets*" (Iammarino and McCann, 2013: 360). However, when looking at EMNEs, the analysis of their location strategies has remained very limited and it has mainly focused on the alternative between the decision to invest in advanced economies vs. other developing/emerging countries with very limited or no attention to sub-national factors. The main conclusion in the existing literature is that EMNEs direct their FDIs towards developed countries when they aim at accessing new technologies and markets, on the contrary they invest in developing countries when they have labour seeking motivations (Kedia et al. 2012; Makino et al, 2002). In addition the literature emphasizes that the likelihood for MNEs to invest in a particular location is also influenced by the characteristics and the capabilities of the investing company. Therefore, the different nature of EMNEs and AMNEs suggests that their investments might

respond differently to national and sub-national drivers (Cuervo-Cazurra and Ramamurti, 2014).

In order to move beyond the simple location behavior dichotomy South-South vs. South-North investments, it is necessary to identify (and operationalize) the key 'motives' attracting foreign investments in different (sub-national) locations. The comparison of the relative importance of these motives for AMNEs and EMNs makes it possible to shed light on the heterogeneity (if any) of their preferences in terms of location strategies.

The literature on location choices identifies 'market-seeking', 'strategic asset-seeking' and 'efficiency-seeking' motives as well as 'imitative behaviors' leading to the spatial agglomeration of (similar) MNEs' investments.

'Market-seeking' motivations have been at the center of the literature on location advantages, suggesting that both AMNEs and EMNEs are attracted by the size and the potential of their prospective host markets (Flores and Aguilera, 2007; Loree and Guisinger, 1995). Over and above national markets, MNEs can target specific customer segments and/or be attracted by the richest regions within countries (Beugelsdijk and Mudambi, 2013; Crescenzi et al. 2014). In those cases, in their location decisions MNEs take into account the subnational (i.e. regional or urban-level) characteristics of the markets rather than the national ones. Kedia et al. 2012 suggest that market-seeking motives play an important role for EMNEs using their investments in advanced economies as platforms for their products to be tailored to the requirements of geographically and culturally distant partners (Goldstein, 2009). The investments undertaken in Italy by Haier - a Chinese white goods manufacturer - are a case in point: the objective of improving the capability to design, develop and manufacture products suitable

for the European markets is a key driver of its location strategy (Pietrobelli et al. 2011).

The expectations on the behavior of AMNEs and EMNEs are more diversified when it comes to 'asset seeking' investments. When MNEs search for host locations endowed with specialized knowledge-related assets that are highly localised and often linked to agglomeration economies and spatially bound knowledge flows their behaviour is inherently more diversified (e.g. Cantwell and Piscitello, 1999; Dunning, 2009; Iammarino and McCann, 2013) depending on the ways in which 'internal' knowledge assets and resources can be balanced and matched with external factors (Alcacer and Delgado 2013). The literature suggests that this motivation is especially relevant for EMNEs. Several empirical studies on large samples of firms show that this is a major reason 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 reported in case studies on well-known companies such as Haier from China and Tata from India (Duysters et al. 2009). Ramamurti and Singh (2009) add 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) EMNEs that do not possess adequate experience are not particularly attracted towards location characterised by technological assets. Given the spatial heterogeneity of these factors, behavioural differences emerge even more clearly when analysed at the sub-national level as in this paper.

In a similar vein, 'efficiency-seeking' investments both from AMNEs and EMNEs are attracted to specific sub-national locations for reasons related to abundant labour supply in excess of local demand and availability of skilled and unskilled

workers (Disdier and Mayer, 2004). However, nominal wage differentials tend to emerge more at the national rather than at the sub-national level (e.g. in the EU, nominal wages are often set by means of national-level collective employment contracts), making this factor less relevant to regional analysis although still captured by national controls.

Finally, both the Economic Geography and the International Business literature have emphasised the importance of 'imitative behaviours' that induce MNEs to concentrate their investments in pre-existing agglomerations of Multinational investments, 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 constantly learn about the potential advantages of alternative locations by observing the entry choices of previous investors.

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 (Belderbos et al. 2011).

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).

EMNEs in developed countries have limited knowledge and little previous foreign investment experience: they face high uncertainty and are likely to 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.

2.   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:

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

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 unemployment rate 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 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.

All country-level observable and unobservable characteristics (from corporate tax policies to business climate and institutional conditions) 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 Data

The empirical analysis is based on 22,065 projects undertaken by MNEs from three selected groups of countries (intra-EU, North America, Emerging Countries) into the EU25. Appendix A includes a detailed discussion of the source of FDI data (FdiMarkets database) and Table A-1 shows the distribution of the investment projects in the EU27 by country of origin, also showing the exact composition of each country group.

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 and NUTS2 for all other countries (Austria, Czech Republic, Finland, France, Greece, Hungary, Italy, the Netherlands, Poland, Portugal, Slovakia, Spain).[2]

Furthermore, investments are classified by FdiMarkets in 18 functions including: Manufacturing, Logistic and Distribution, Sales and Marketing, R&D, Headquarters. Following Defever (2006), we have aggregated them in two

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[2] 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.

categories: production-oriented (PRODUCTION) and non-production functions (HQ/R&D/SALES/DIS), including headquarters, R&D, design, sales and marketing, logistics and distribution. Although we cannot measure directly the sophistication of these sets of functions, we reasonably assume that the non-production functions are more sophisticated and possibly more knowledge intensive, likely to bring high value added shares (Ali-Yrkkö, et al., 2011; Kraemer et al., 2011). The location drivers of the investments from different origins are compared across the two different functional sub-samples.

3.3. The explanatory variables

The investment drivers included in the econometric model reflect the conceptual framework presented in the previous section and are based on the operationalization of the various investment motives discussed above (Table B-1 in the Appendix provides detailed information about definitions and sources):

1) *Market seeking motivations* are operationalized by capturing the relevance attached by MNEs to the *Regional GDP per capit*a of their host regions.

2) *Strategic asset seeking motivations* are captured by two key dimensions of regional innovative dynamism: the innovation output intensity and the existence of socio-economic conditions favourable to innovation. *Patent Intensity* captures the extent to which MNEs expect to benefit from localised innovative dynamism and knowledge spillovers from indigenous firms (Mariotti et al., 2010; McCann and Mudambi 2005). Moreover, to go beyond formal innovation, we introduce the *Social Filter Index* (Crescenzi et al. 2012; Crescenzi and Rodríguez-Pose 2011), which is an indicator resulting from the combination of a broader set of structural socio-economic characteristics, playing a crucial role in the definition

of the profile of an innovation prone environment. This indicator 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 (Phelps et al., 2003; Phelps and Waley, 2004; Fuller, 2005). Under the constraint of the limited availability of regional data for the EU 25 regions, 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.[3]

We expect that both *Patent Intensity* and the *Social Filter* positively influence investments aimed at seeking strategic assets. According to the existing literature this scope is crucial for EMNEs investing in the EU.

3) Efficiency seeking motivation. *Regional unemployment* is a proxy of the labour market conditions in terms of the excess of labour supply over demand (Py and Hatem, 2009). 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 country-level effects control for them. In the case of EMNEs investing in the EU, we do not expect efficiency seeking motivation playing a key role.

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

4) Regional agglomeration of foreign investments. 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* and the *number of investments pursuing the same function*. Due to their little previous experience in the EU, EMNEs are expected to strongly rely on the informational spillovers deriving from the concentration of similar firms in both functional and sectorial terms.

3. 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 1 and 2) that assesses the relative importance of market, strategic asset and efficiency seeking strategies and of the agglomeration factors. The significance of these location determinants is estimated for all investors (Column 1), for investors from within the EU (Column 2: *EU*), from North America (Column 3: *NA*) and from emerging economies (Column 4: *EMNE*). The comparison of the relative importance of the different drivers of MNEs location decisions sheds light on the different strategies adopted by these firms depending on their origin.

In the second sub-section (4.2) - which makes reference to the lower part of the Tables 1 and 2 - 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 in order to test how MNEs strategies differ across production-oriented and non-production functions the location drivers are assessed for all investments (Table 1) first and

then separately for the sub-sample of non-production investments in order to capture the distinctive location patterns of possibly more knowledge-intensive and sophisticated functions (Tables 2).

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. 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).

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, 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[4] 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.

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

4.1. Location determinants of EMNEs and AMNEs in the European regions

In this section our attention focuses on how the regional level location determinants (reported in the upper part of Tables 1 and 2) impact on the regional probability of attracting MNEs investments.

Table 1 - Location of MNEs in the EU regions by origin

VARIABLES	(1) ALL		(2) Intra-EU		(3) North America		(4) EME	
Regional pc GDP	-1.24e-06*		-2.81e-06***		6.44e-06***		1.73e-05**	
	(7.12e-07)		(7.47e-07)		(2.40e-06)		(8.43e-06)	
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)	
Region.unemployment	0.000646		0.000976		-0.00340		-0.00404	
	(0.000976)		(0.00104)		(0.00314)		(0.0192)	
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)	
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 2 - Location of MNEs in the EU regions by origin: non-production oriented functions only (HQ/R&D/SALES/DIS**)**

	(1)		(2)		(3)		(4)	
VARIABLES	**ALL**		**Intra-EU**		**North America**		**EME**	
Regional pc GDP	4.92e-06***		-1.17e-06		8.92e-06***		1.94e-05	
	(1.27e-06)		(8.97e-07)		(2.58e-06)		(1.63e-05)	
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)	
Regional unemployment	0.00712***		0.000307		0.00170		0.00360	
	(0.00138)		(0.00107)		(0.00318)		(0.0171)	
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)	
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

When looking at all investments in the EU regions, regional *GDP per capita* exerts a negative and significant influence on the probability of attracting FDIs (Table 1, Column 1), suggesting that traditional market seeking motivations do not play a key role in attracting investments in Europe and that a de-concentration of investments away from core wealthy regions (i.e. those with relatively higher GDP per capita) is taking place. However, this

somewhat unexpected result - contrasting with some existing literature (e.g. Head and Mayer, 2004 and Loore and Guisinger, 1995) - changes when FDIs are differentiated by country of origin. In fact, the negative and significant impact is confirmed only for intra-EU investments (Column 2), while non-EU FDIs, from both North America (Column 3) and from emerging countries (Column 4) are 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 for EMNEs the market seeking motivation is strong and driven by the aim to be present in the largest EU markets. As a consequence, in this case a clear behavioural difference emerges between intra-EU and extra-EU investments (both from NA and emerging countries) as a result of their diverse, market-seeking strategies. Further evidence in this regard is shown in Table 2 where the empirical analysis focuses on more knowledge-intensive functions by excluding purely production-oriented investments. In this case, the market seeking motivation is only confirmed for NA investments, while the coefficients become insignificant both for intra-EU investments and for EMNEs, which, as discussed below, seem to be driven more by strategic asset seeking motivations (Table 2, Columns 2, 3 and 4).

When considering strategic asset seeking motivations, the empirical results unveil additional behavioural heterogeneity according to the origin of the investments. In Column 1 (Table 1), 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 1, 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) functions (Table 2, Column 4). This evidence is particularly important because it confirms the diversified internationalisation strategy of EMNEs that invest in Europe to seek both markets and high-value strategic assets, the latter involving functions such as R&D, design and development (Amighini et al., 2013).

The analysis of the role of broad socio-economic factors supporting innovation sheds additional light on strategic asset seeking behaviours. In Table 1 the *Social Filter* – our proxy for 'soft' innovation factors and socio-economic innovation proneness - is positive and significant only for intra-EU investments. Extra-EU companies are less likely to respond to '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). This result is further reinforced when the sample is restricted to non-production functions (HQ/R&D/SALE/DIST) (Table 2). In addition, 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. 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 2) and only emerge when 'broader' controls (EU15 vs. EU 10) are included.

Regional unemployment – our proxy for efficiency-seeking motivations – 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 1) but it turns out positive and significant in non-production-oriented functions (Table 2, Column 1) when investments are not separated by country of origin while it remains insignificant for all origins (Columns 2 to 4). This suggests a strong 'composition effect': when all non-manufacturing investments are assessed together efficiency seeking motivations seem to be relevant explanations for FDI in the EU. However, once origin-country heterogeneity is accounted for by means of separate sub-samples, their impact disappears. Column 1 in Table 2 shows that investments in non-production and supposedly more knowledge-intensive functions are sensitive to a number of different drivers: market seeking (GDP per capita); strategic asset seeking (Patent per capita and Social Filter) and efficiency seeking (Regional unemployment). However, while all other factors remain significant for one or more groups of countries (suggesting that the area of origin does influence MNEs preferences in their regard) the same is not true for regional unemployment. In line with previous research (e.g. Disdier and Mayer 2004) these results suggest that efficiency-seeking motives should be assessed on a case-by-case basis being so hard to draw any 'general' conclusion on their role. In addition, in the very nationally centralised EU labour markets, regions might play a relatively minor role in this regard: as a matter of facts in our robustness check - where national 'controls' are replaced by broader EU15 vs. EU 10 nests – in line with our results for market seeking motives 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.

The process of *agglomeration* of MNEs investments is an additional important explanation of their location behaviour: Table 1 shows a negative, although only marginally significant, coefficient for intra-EU investments (Column 2), confirming a process of de-concentration of EU investments towards less congested regions, in line with the findings discussed above on GDP per capita and regional unemployment. Then considering the two other indicators of agglomeration - the cumulative number of pre-existing investments in the same sector and in the same function in the region – a completely different story emerges. Both agglomeration proxies exert a significant and positive influence on the location of all investments. The cumulative nature of investment location choices confirms the expected role of specialised agglomeration economies and informational spillovers (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 and (ii) 'horizontal' spillovers, such as labour market specialization and supply of specialised 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 functions is consistent for all MNEs notwithstanding their origin while the sectorial agglomeration becomes insignificant for EMNEs investing in non-production functions (Tables 2, Columns 4). This is a new original finding about the location behaviour of EMNEs: given the high uncertainty characterizing their early explorations in the EU regions, multinationals from emerging countries choose to locate in regions specialised in the same sets of functions as their foreign investments, searching for informational spillovers and agglomeration

economies when undertaking strategic asset-seeking FDIs in higher value-added functions.

4.2 Regional vs. national drivers

Turning our attention to the lower sections of Tables 1 and 2 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 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. countries in Tables 1 and 2 and group of countries in the 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.[5] 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 1 e 2

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[5] 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).

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 functions undertaken.

In what follows, our discussion in based on the IVs in Table 2 only, given that they do not differ substantially from IVs in Table 1. 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 2). The location decisions in regions belonging to the same country are closely correlated 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 higher 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.

When it comes to EMNEs the picture is again different. LR Test confirms the significance of country-level nests (Column 4). Furthermore, the analysis of the parameters associated to individual countries shows that the IVs for the UK, Germany and France are significant and relatively large and IVs for The Netherlands and Italy 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 of those countries that have historically received the larger shares of their investments 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, Germany, France and to a less extent The Netherland and Italy.

4. Conclusions

This paper fills a relevant gap in the existing literature in both Economic Geography and International Business Studies by exploring whether EMNEs differ from AMNEs in their location decisions at the national and sub-national levels. Table 3 summarizes the main findings of the paper.

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. The wealthy markets of the 'core' EU regions attract investments from extra-EU MNEs - both from emerging countries and from North America - while intra-EU investments tend to target less affluent and less congested regions. Coherently with this evidence of intra-EU de-concentration, the spatial agglomeration of pre-existing foreign investments in the same region appears to discourage FDI from within the Union while EMNEs and AMNEs are not influenced by the agglomeration of investments per se: what matters for all MNEs (including EMNEs) are functional and

sectorial agglomeration forces. Conversely, efficiency-seeking motives are generally less important and largely captured by national effects.

Table 3 – The location determinants of MNEs in the EU regions: A summary

Determinants of foreign investments	Source of foreign investment		
	EU	NA	EME
Market-seeking*	(-)	(+)	(+)
Strategic asset-seeking*			
• Hard drivers (patents)	(+)	(+)	(+) Only for NON-PRODUCTION FDI
• Soft drivers	(+)	(+) Only without full country controls)	Never significant
Efficiency-seeking*	(+) (Only without full country controls)	(-) (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 1 and 2.
 * (+) and (-) reflect respectively positive and negative significant coefficients
 ** >0.3 in Table 2

The second key result is that strategic asset seeking motives are central to the understanding of the specificities of EMNEs' spatial behavior in comparison to all other MNEs. EMNEs seek technological competences (i.e. patent intensity) when they invest in higher value added functions. However, 'soft' regional innovation conditions (i.e. the Social Filter) are never significant attraction factors for EMNEs. The large innovation and technological gap still prevents EMNEs from fully taking advantage of an innovation-prone regional context. This implies that EMNEs are still rather inexperienced when

undertaking strategic asset seeking investments because they might lack adequate absorptive capacity.

Third, the analysis shows that EMNEs attach great importance to both the regional and national location factors. 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 shares a number of limitations with the existing literature. The investment dataset—although robust relative to other similar datasets—is limited to greenfield investments with no information on other typologies of FDI (e.g. mergers and acquisitions) or on non-equity forms of internationalization. Moreover, the dataset does not allow including any 'parent company' controls for repeated investments by the same firm in different locations. These investments are certainly not independent but the current dataset does not allow reconstructing the ownership structure of MNEs, and capturing the linkages among investments. However, having acknowledged these limitations, 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 these new actors are not moved by efficiency-seeking motives. Their interest for large markets – that cannot easily be influenced by public policies – is coupled by two other 'attraction' factors: strategic assets and functional and

sectorial agglomeration economies. Moreover, their spatial behavior is different from other MNEs in particular when it comes to the most sophisticated knowledge intensive functions 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. Helping EMNEs to capture the advantages of the rich national and regional eco-system landscape in the EU might be the key to attract their investments in the most 'valuable' functions. 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. This for example was sought after by Costa Rica's investment promotion organization CINDE (Coalition of Development Initiatives) in its selective strategy to attract Intel and other foreign investors (Blyde et al., 2014). 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 well as the opportunistic acquisition of cheap assets with respect to technology and other strategic assets, which is diffusely feared in European countries.[6] Policy makers would benefit from a better

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[6] 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.

understanding of EMNE behaviour in Europe in order to minimize predatory investments and attract FDIs contributing to the local economy.

In addition, 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 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.

Finally, 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.

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Appendix A

Data on FDI

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 around 72,000 worldwide projects with no minimum investment amount required.[7]

Individual location decisions are a more appropriate unit of analysis than the value of the investment when looking at the location strategies of multinationals and their motives because the choice of a specific country and the motivation of the investment have been shown to be largely independent from the amount of capital invested (Amighini et al., 2014; Sutherland and Anderson, 2014). Moreover, the investment size varies widely across sectors, with resource-intensive sectors showing higher average investment size 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 size) as their unit of analysis (among others see Castellani and Pieri, 2013; Crescenzi et al., 2014; Ramasamy et al., 2012).[8]

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

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[7] 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 FDI in Europe based on a completely independent source. All these checks confirm the reliability of the *fDi Markets* database on the spatial distribution of FDI.
[8] 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.

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.

Table A-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		**5367**	**24.32**
	USA	*4990*	*22.68*
	Canada	*377*	*1.71*
Emerging countries		**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

Appendix B

Data sources and detailed description of regional variables

Table B-1 – Variables' definitions and sources

Dependent Variable		**Source(s)**
Location decisions of greenfield investments in the regions		FDi Markets
Explanatory variables		
Characteristics of the host regions		
Regional GDP per capita		EUROSTAT
Patents per capita	EPO patent applications per capita	EUROSTAT
Social Filter	The index combines, by means of Principal Component Analysis (Table A-2), the variables describing the socio-economic realm of the region (listed below)	EUROSTAT
Education Employed People	% Employed People with Tertiary Education Level (Isced 79 79 levels 5-7)	EUROSTAT
Education Population	% Population with Tertiary Education Level (Isced 79 levels 5-7)	EUROSTAT
Agricultural Labour Force	Agricultural employment as % of total employment	EUROSTAT

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Long Term Unemployment	Long term unemployed as % of total unemployment.	EUROSTAT
Regional Unemployment Rate		EUROSTAT
Agglomeration indicators: for each region/investment pair		
Total # of Investments	Cumulative #of total FDI in the region (all sectors, all functions)	fDi Markets
Total # of investments same FUNCTIONS	Cumulative # of FDI in the region in the same FUNCTION 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

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

Table B-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 B-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
Education Employed People	0,6125	0,3381	0,1549	-0,6975

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