London School of Economics and Political Science

Aspects of Multinational Enterprises in the Global Economy: Location, Organisation and Impact

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Declaration

I certify that the thesis I have presented for examination for the MPhil/PhD degree of the London School of Economics and Political Science is solely my own work other than where I have clearly indicated that it is the work of others (in which case the extent of any work carried out jointly by me and any other person is clearly identified in it).

I declare that my thesis consists of 51,901 words.

Statement of conjoint work

I confirm that Chapters 1, 2 and 3 were jointly co-authored with Professor Iammarino and Dr Crescenzi. I contributed 50% of the work in Chapters 1 and 2, and 66% in Chapter 3.

I also confirm that Chapter 5 was jointly co-authored with Dr Gagliardi and I contributed to 50% of this work.

London, 15th July 2015

Andrea Ascani

Abstract

The role played by Multinational Enterprises (MNEs) in the global economy is becoming increasingly relevant as they shape sectorial, regional and national trajectories of economic development through their cross-border activities and behaviour. This thesis investigates how the characteristics of MNEs, their activities and location-specific attributes interact with each other and shape both behaviour and choices of MNEs and the impact of foreign direct investment (FDI). The thesis is structured into a general Introduction, aimed at guiding the reader throughout the thesis and providing a broad conceptual framework, and three analytical Parts focusing on (i) MNE greenfield investment location strategies, (ii) MNE selection decisions in cross-border acquisitions and (iii) impact of MNE operations on host regions.

In Part I, the location behaviour of MNEs, in the light of the specificities of the recipient economies, is carefully analysed. In particular, the three Chapters of Part I investigate the location behaviour of European MNEs in a set of European Union (EU) neighbouring countries over the period 2003-2008, by focusing on different aspects of location strategies. In Chapter 1, an initial descriptive analysis is produced in order to account for the general determinants of MNE location behaviour. This chapter, therefore, offers a quantitative assessment of the main drivers of FDI in the EU neighbourhood and it also explores sectorial and functional dynamics. Chapter 2 deepens the study of MNE location behaviour by developing both a quantitative and a qualitative analysis of FDI determinants based on the experience of Italian MNEs operating in the EU neighbourhood. This mixed-methods approach allows integrating the general insights emerging from the analysis of the broad group of Italian investors with the in-depth case studies of two specific large Italian MNEs with a strong presence in EU

neighbouring countries in recent years. Subsequently, in Chapter 3, particular attention is devoted to the empirical analysis of the spatial distribution of MNE activities in relation to differences in terms of economic institutions of the host locations. This specific line of research is based on an innovative quantitative approach to the study of MNE location strategies in terms of greenfield FDI in the sample of neighbouring countries of the EU. In particular, Chapter 3 focuses on the heterogeneous location strategies of MNEs with respect to location attributes. Overall, the main findings of Part I of the thesis not only suggest that the traditional drivers of FDI emphasised in the existing literature, such as market access and cost-saving factors, still represent relevant elements for MNE behaviour, but it is also highlighted that MNE specificities are crucial to understand investment choices and that industry-wide differences can influence both entry modes and the location decisions of MNEs. The most innovative contribution of Part I, however, is related to Chapter 3, where the quantitative analysis of MNE location behaviour by means of Mixed Logit models suggests that MNEs have heterogeneous preferences with respect to location characteristics, especially economic institutions. This indicates that MNE strategies are highly diverse and the previous quantitative literature may have underestimated the complexity of the interaction between MNEs characteristics and location attributes.

After exploring the determinants of MNE location strategies, Part II of the thesis aims at studying the selection decisions of MNEs engaging in cross-border acquisitions. This represents a very novel area of enquiry and the objective of Chapter 4 is to quantitatively assess the relevance of target firms' attributes in shaping MNE acquisition choices in the framework of their international organisation of production. In particular, the aim of this Chapter is to assess whether acquisition decisions are associated to the search of strategic assets or to market access considerations. Results suggest that, in the sample of EU15 firms

under analysis in the period 1997-2013, the latter motivation tends to be more relevant. This is in line with market access motives operating at the firm level, differently from other studies on FDI and acquisitions focusing on the industry- or country-wide level of analysis. Evidence in favour of strategic-asset seeking strategies of MNEs acquiring European firms, instead, remains weak. Therefore, this Chapter highlights that domestic firms engaging in the generation of successful business linkages within or across national markets can represent a valuable target for MNE cross-border acquisition decisions.

Finally, building on the previous sections on the determinants of location choices and selection patterns in cross-border takeovers, Part III of the thesis focuses on the impact of FDI on recipient areas in terms of their innovation potential. Chapter 5 is developed as a quantitative analysis with the specific objective of isolating the causal effect of MNE operations on the innovative performance of host regions. This is investigated by employing NUTS-3 level data on Italy for the period 2001-2006. The empirical analysis is supported by the implementation of an Instrumental Variable (IV) strategy in order to tackle potential endogeneity bias in the estimation of FDI-induced spillovers. This Chapter contributes to the existing debate by focusing on the geographical level of FDI externalities, whereas the great majority of past studies mainly investigate industry-wide effects. Results suggest that the presence of FDI in a location contributes to fostering the innovative performance of the local economy. Therefore, MNEs can be seen as carriers of superior knowledge and new organisational practices that spill over space to the benefit of domestic firms. In a policy-making perspective, this provides a clear rationale for the attraction of FDI as an international channel for knowledge sourcing.

The three Parts of the thesis are strongly complementary as the strategies of MNEs in Part I and II in terms of FDI (i.e. greenfield and acquisitions) are integrated with an assessment of the impact that

corporate activities have on recipient economies in Part III. Although the broad conceptual background to the work as a whole is provided in the general Introduction of the thesis, each Chapter has a section devoted to a dedicated and specific review of the literature. Moreover, the thesis also contains an acknowledgement of the limitations of the study, which is provided in the concluding sections of each Chapter, as well as a discussion of the contributions and implications that the analyses developed in the various Chapters have for academic research and policy-making.

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All errors and omissions remain my own.

Introduction

I. Overview

This thesis explores how Multinational Enterprises (MNEs) shape the international organisation of economic activity through Foreign Direct Investment (FDI), by focusing on a number of relevant aspects that are – to different extents – still partially addressed by existing studies, or subject to mixed and inconclusive empirical evidence. This thesis aims at filling some of the research gaps that characterise the literature, albeit this being vast and well-established. The thesis' structure consists of the present introductory section and five empirical chapters divided into three conceptual parts associated with different aspects of MNE activity. Each chapter of the thesis includes an introduction, a scrutiny of the literature with a presentation of the hypotheses, a description of data and methodology, a discussion of results and a final section devoted to concluding remarks, limitations and future research directions.

The relevance of MNEs in the global economy has dramatically increased in the last decades, as evidenced by the astonishing spur in the global growth rate of FDI since the mid-1980s and the consequent outpacing of world exports and nominal GDP growth rates. Figure 1 illustrates this noticeable trend employing data from the United Nations Conference on Trade and Development (UNCTAD), the well-known international organisation that, in response to the unprecedented role played by MNEs in the world economy, inaugurated in 1991 a series of yearly studies to debate the characteristics, drivers and trends of FDI, and currently publishing the 25th edition of the World Investment Report.

For the purpose of this thesis an MNE is intended in its simplest definition as a firm that engages in activities across national borders through FDI. In this respect, the firm undertaking FDI is the *parent*

company located in the country of origin, while the firm receiving the FDI is defined as foreign *affiliate* or *subsidiary* and it is located in the destination country[1]. At the simplest level, FDI modes can be classified into greenfield investment and cross-border mergers and acquisitions (M&A). The former encompasses the establishment a completely new plant in a foreign location, whereas the latter entails the acquisition of a certain stake of ownership in a pre-existing company abroad.

The objective of this introductory section is to provide a general background framework for the thesis, describe its motivation, explain the research aims and illustrate the structure and main content of the various chapters. In particular, the next section discusses the basic ideas that underpin the conceptualisation of MNEs in academic research. Subsequently, the structure of the thesis is described and a summary of each chapter's objective, results and original contribution is offered. Finally, a concluding section summarises the inner logic of the thesis, its novelty and outlines some directions for future research.

[Figure 1 here]

II. Broad conceptual framework

The existence and importance of MNEs has received the attention of scholars for decades, even before the enormous global increase in multinational activity. A plethora of conceptual explanations, drawing on diverse theoretical traditions, has been provided over the years to understand and analyse the behaviour and strategies of MNEs. A fundamental theoretical and empirical puzzle that academic research has attempted to solve is associated to the existence of firms that decide to become multinational. The tentative explanations of this aspect have

[1] For the purpose of this thesis we use the notions of foreign affiliate and foreign subsidiary interchangeably.

been underpinned by numerous hypotheses formulated over time. The aim of this section is to review the main conceptual contributions to this debate in order to provide a general framework for the various chapters of the thesis, where more detailed aspects of MNEs will be analysed. Therefore, this section will clarify the conceptual factors that have been hypothesised by scholars as crucial for MNEs to exist, while the specific conceptual frameworks associated to the distinct aspects investigated in this thesis are developed in dedicated sections within the various chapters.

The seminal work of Hymer (1976/1960) and Kindleberger (1969) provides the starting point for a conceptualisation that explains consistently why some firms engage in cross-border activities. Their basic insight is that domestic firms tend to have specific advantages over foreign firms when serving their domestic market. These advantages are embodied in the domestic nature of local firms and range from better information about the local economy and customers' tastes to greater familiarity with the political and legal system. Hence, foreign firms that wish to operate in foreign markets have to offset their disadvantages over domestic actors by increasing their efficiency. This is possible through the acquisition of firm-specific advantages, which may vary from economies of scale and product differentiation, to technological advantages and access to cheaper factors of production. While insightful, this conceptualisation does not help to explain why firms decide to locate in a foreign country. In fact, even if foreign firms have specific advantages over domestic firms, they may prefer to serve distant markets by exports.

Another seminal contribution to the economic theory of MNEs is the product life-cycle model of Vernon (1966, 1979). He considers three main stages of a product life-cycle. First, when a product is new it is mostly produced and sold by the most innovative firms in the home country

(normally a developed country). In the second stage, the product becomes mature and it is exported. In this phase, demand grows in foreign markets and the firm may decide to invest abroad to serve those markets locally: thus, in this stage production gradually moves to foreign countries (mainly other developed economies). Third, the product is standardised and more firms are able to produce it. As a consequence, price competition leads firms to invest in locations that make a reduction in production costs possible (mainly developing countries). While this theory provides an insightful conceptualisation of MNEs in innovative industries, it does not offer a strong explanation for FDI in lower technology sectors. Furthermore, this theory entails a simplistic and reductive view of the innovation process, overlooking the complexity of MNE innovative activities (Iammarino and McCann, 2013)

The occurrence of FDI has also been explored in terms of attempts of firms to limit the market power of their competitors. According to this hypothesis, oligopolistic firms follow similar FDI strategies as a way to countering the advantages of other competing firms. Therefore, foreign investment is considered as an oligopolistic reaction with the aim of offsetting the competitive edge of similar firms (e.g. Knickerbrocker, 1973; Flowers 1976; Yu and Ito, 1988). An important limitation of this theory is that its logic implies that more intense competition on world markets is very likely to lead to less oligopolistic reaction and, as a consequence, lower volumes of FDI. However, direct observation of world trends shows that nowadays there is stronger competition and higher volumes of FDI.

A highly relevant contribution to the explanation of why firms become multinationals is provided by the hypothesis of internalisation of external markets (Buckley and Casson, 1976; Casson, 1979; Rugman, 1981). Fundamentally, the existence of imperfect markets implies higher costs to link activities and exchanges across geographically separate markets. Hence, firms decide to internalise these markets within their

organisational structure and to operate exchanges within the boundaries of the firm across national borders. In other words, firms become multinationals in order to avoid imperfections such as market uncertainty, wastes of time and resources and asymmetric information. In this sense, some firms prefer to open a subsidiary in another country and to trade with it rather than licensing to local firms or exporting.

Underpinned by the insight of Hymer and Kindleberger on firm-specific advantages and the idea of internalisation of external markets, Dunning (1977, 1980 and 1988) elaborate the most widely accepted and comprehensive economic framework of the origin of MNEs. His well-known OLI eclectic paradigm entails that firms must satisfy three conditions to become multinationals: (i) they have to possess owner-specific advantages (O), (ii) some location-specific advantages should be available (L) and (iii) they have to find profitable to internalise the use of ownership advantages (I). This seminal conceptualisation made by Dunning still provides a coherent and well-established answer to the issue of the existence of MNEs. The existence of ownership-specific advantages (O) possessed by some firms may lead to the decision to internalise (I) these advantages and to locate in foreign markets as a way to maximize their productive efficiency and to limit the impact of uncertain and imperfect markets on production. In other words, FDI occurs when firms possess assets of their own, and consider as more convenient to internalise the use of such advantages rather than selling or sub-contracting them to external companies. At the same time, these firms decide to locate abroad where location-specific factors (L) allow for a more profitable utilisation of the afore-mentioned ownership advantages. In this perspective the (O), the (L) and the (I) are all fundamental conceptual categories to explain the existence of MNEs and the reasons why they undertake foreign investments. As a matter of fact, according to Dunning himself “the OLI triad of variables […] may be likened to three-legged stool: each leg is supportive of the other, and the

stool is only functional if the three legs are evenly balanced" (Dunning, 2009:5). The eclectic OLI paradigm, therefore, provides a convincing and flexible conceptualisation of MNE existence and behaviour, although being lacking under other aspects. For instance, the geography of MNEs remains loosely specified in its (L) advantages, calling for further for investigation (Iammarino and McCann, 2013).

More recently, the study of MNE has also grown in the international trade literature, where the combination of the Krugman (1980) model based on product differentiation and monopolistic competition with the notion of firm heterogeneity (Melitz, 2003) has allowed to overcoming formal problems in modelling MNE activity. In this respect, a relevant implication of firm heterogeneity for the study of MNE is related to the intra-industry diversity of internationalisation modes as a response to differences in the accumulation of knowledge across MNEs (Castellani and Zanfei, 2006).

III. Aim and structure of the thesis

While the academic literature studying the operations of MNEs is large, this thesis identifies a number of research gaps associated with specific aspects of multinational activity. The specific contribution that the thesis will offer to the academic debate is discussed in each of the chapters that constitute the main body of this work. Nevertheless, in explaining the general structure and aims of the thesis, this section will briefly discuss the main points of novelty developed in the various chapters. In general, this work contributes to the literature on MNEs and FDI and, particularly, on the different streams of research that mainly contribute to this topic, such as economic geography, international economics and international business and management studies.

As mentioned above, the thesis is divided into three main parts containing five chapters. The first part contains three chapters while the remaining two parts are constituted by one chapter each.

Part I - MNE location strategies

In the first part, this thesis examines the location behaviour of European MNEs with respect to a number of drivers that are under-explored in the literature. The first chapter offers an explorative analysis of MNE location choices in countries linked to the 'core' of the European Union (EU-15) by different degrees of functional, economic and political integration: the EU 'New' Member states, Accession and Candidate countries, European Neighbourhood Policy countries, as well as Russia. Understanding the drivers of Foreign Investment (FDI) in these countries is highly relevant in consideration of their increasing integration into the global market and the strong influence exerted by the EU on this process. By employing data on individual greenfield investment projects, this chapter aims at disentangling the drivers of FDI in these countries for different industrial sectors, business functions and investment origins. The empirical results suggest that FDI in the area tends to follow market-seeking and efficiency-oriented strategies, and show path-dependency and concentration patterns that may reinforce core-periphery development trajectories in the EU neighbourhood.

The second chapter narrows the analysis down to a specific case study of an 'old' EU member country, Italy, investing in the same destination area analysed in the first chapter. In so doing, this second chapter adopts a mixed methods strategy combining a descriptive statistical analysis with interviews with selected MNEs. Thus, the analysis investigates the economic integration between Italy and the EU neighbouring countries by exploring the location drivers of Italian-owned MNEs in 33 destination economies including the New Member States of

the EU and the European Neighbouring countries. The paper compares market-seeking and efficiency-seeking motivations with asset-seeking strategies. The quantitative analysis assess the location determinants of 518 Italian MNEs that invested in the area in the 2003-2008 period, while qualitative information on strategic location decisions is collected by means of in-depth interviews with executives in two of the largest Italian MNEs active in the region. The evidence suggests that market-seeking considerations are still predominant drivers of Italian MNE location decisions in EU Neighbouring Countries, together with resource-seeking motivations. However, different MNEs are developing diversified strategies to increase their access to these areas which are of increasing interest for global investors.

The third chapter offers the most structured analysis of MNE location behaviour looking at a neglected factor in the literature. This chapter, in fact, examines how the location behaviour of MNEs is shaped by the economic institutions of the host countries. The analysis still covers a wide set of geographically proximate economies with different degrees of integration with the 'Old' 15 European Union members: New Member States, Accession and Candidate Countries, as well as European Neighbourhood Policy countries and the Russian Federation. The analysis aims at shedding light on the heterogeneity of MNE preferences for the host countries' regulatory settings (including labour market and business regulation), legal aspects (i.e. protection of property rights and contract enforcement) and the extent of government intervention in the economy. By employing data on 6,888 greenfield investment projects, the random-coefficient Mixed Logit analysis here applied shows that, while the quality of the national institutional framework is generally beneficial for the attraction of foreign investment, MNEs preferences over economic institutions are highly heterogeneous across sectors and business functions.

Part II – Selection patterns in cross-border acquisitions

After exploring the determinants of MNEs location decisions, this chapter addresses the patterns of selection of cross-border acquisition operations undertaken by MNEs. This represents a very novel area of enquiry and the objective of this chapter is to quantitatively assess the relevance of target firms' attributes in shaping the acquisition choices of MNEs in the framework of their international organisation of production. By employing firm-level data on EU-15 countries, this fourth chapter studies the extent to which different firm-level attributes of domestic target companies motivate cross-border takeovers. In so doing, this work analyses changes in ownership from domestic to foreign in a sample of more than 300,000 firms in EU-15 countries over the period 1997-2013, focusing in particular on the productivity of target firms as well as their ability to establish successful market linkages. Results suggest that selection on target firms' profitability systematically drives MNE strategies of cross-border takeovers: that is, domestic firms that experience an increase in their business have a higher probability of being acquired in any given year. By contrast, firm efficiency, in terms of labour productivity, does not relate to international acquisition decisions, but the effect of firm profitability tends to be concentrated in the group of more efficient firms. These findings are confirmed also by employing different measures of firm performance. Baseline results still hold across a large number of checks and extensions, indicating that within-firm differences in profitability are relevant drivers of cross-border acquisitions.

Part III – The impact of FDI on recipient economies

Finally, building on previous chapters on the determinants of location choices and selection patterns in cross-border takeovers, the third part of the thesis focuses on the impact of FDI on recipient areas in terms of

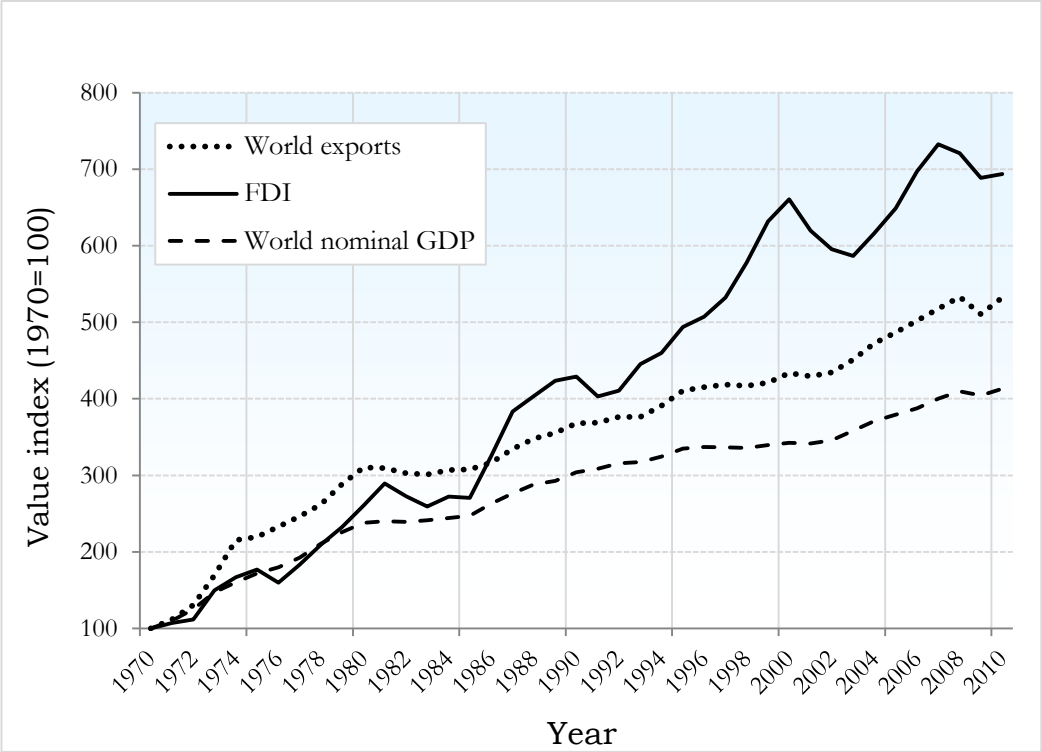
their innovation potential. This analysis is developed as a quantitative study having the objective of isolating the causal effect of MNE operations on the innovative performance of host regions. In this respect, this fifth chapter studies the extent to which knowledge externalities arising from FDI foster local innovative performance. The quantitative analysis is developed by employing manufacturing data on Italian provinces over the period 2001-2006 with the specific objective of investigating the causal impact of inward FDI on the local generation of innovation. Adopting a Knowledge Production Function approach (KPF), the chapter suggests that in the case of Italy the presence of foreign investment is beneficial for the innovative performance of the recipient local economies. These results are robust to a number of checks, thus contributing with new evidence to the literature on the impact of FDI on destination countries. In terms of policy consideration, this implies that a structured policy for the attraction of external capital might channel additional sources of knowledge to complement local capabilities.

IV. Concluding remarks

This thesis focuses on the study of MNE activities in the global economy, providing a comprehensive and novel examination of specific aspects of corporate operations of crucial relevance for academic and policy purposes. In this respect, the thesis is comprehensive since it covers both determinants and impacts of MNE activities and FDI, considering not only the viewpoint of MNEs but also that of recipient economies and domestic firms. The thesis also provides an original contribution since it identifies new areas of enquiry within the vast and well-established literature on MNEs, by asking novel research questions and/or by combining original data sources, methodologies and conceptual perspectives to address existing questions on which empirical evidence remains mixed or inconclusive.

The three parts of the thesis are complementary in addressing various and interconnected aspects of MNE strategies and behaviour, thus developing and following an imaginary *fil rouge* that starts from the analysis of the location decisions of MNEs undertaking greenfield FDI, crossing the patterns of selection in the decisions of MNEs engaging in cross-border acquisitions, and ending with the examination of the impact of FDI on host economies' innovative capacity at a detailed geographical level. In general, what emerges from the various chapters is that the role played by MNEs in the global economy is increasingly relevant and that these actors are able to shape the patterns of international investment and, ultimately, the trajectories of economic development at both national and subnational level. The continuous re-organisation of international production in response to MNE strategies and behaviour, therefore, deserves further analysis as far as most of the aspects addressed in this thesis are concerned, including MNE heterogeneous preferences with respect to location-specific attributes such as economic institutions, MNE selection strategies underpinning cross-border takeovers, and the long-standing but still inconclusive issue of FDI-induced localised knowledge spillovers. In this sense, this thesis contributes to pave the way for further research on aspects of MNEs and FDI that are in part overlooked by existing studies or subject to conceptual and empirical controversy.

Figure 1: Growth of FDI, trade and GDP in the world, 1970-2010



Source: own elaboration on UNCTADSTAT data.

Part I: MNE Location Strategies

Chapter 1 - The geography of foreign investments in the EU Neighbourhood

1.1 Introduction

Over the past decades the world economy has been characterised by an increasing process of internationalisation of economic activities with the involvement of a growing number of countries. According to UNCTAD, the world stock of Foreign Direct Investment (FDI) in 2010 has reached $20 trillion dollars, while the figure for the first half of the 1980s was below one trillion.[2] The dramatic expansion of international investment represents one of the main features of the process of globalisation, in which developing and transition economies have been progressively more involved (e.g. Moran, 1999; Asiedu, 2002; Iammarino and McCann, 2013).

This paper aims to explore the geographical patterns of FDI in a set of developing and transition economies linked to the 'core' of the European Union (EU-15) by different degrees of functional, economic and political integration, and that will be broadly referred to as the 'EU neighbourhood'. Such an area embraces the EU New Member States (NMs) that joined the EU in 2004 and 2007 (strongest degree of integration with the 'core' of the EU-15), Accession and Candidate Countries (ACC), European Neighbourhood Policy (ENP) countries, and Russia (the latter with the weakest degree of integration with the EU-15, stronger autonomy, but crucially important 'gravitation point' for investments in the area).[3] This group of countries represents a very

[2] http://unctadstat.unctad.org.

[3] NMs: Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia and Slovenia; ACC: Albania, Bosnia and Herzegovina, Croatia (which joined the EU in 2013), Macedonia, Montenegro, Serbia and Turkey; ENP Southern: Algeria, Egypt, Israel, Jordan, Libya, Lebanon, Morocco, Syria, Tunisia; ENP Eastern: Armenia, Azerbaijan, Belarus, Georgia, Moldova, Ukraine.

relevant case in terms of patterns of FDI and strategies of multinational enterprises (MNEs) for its geographical proximity as well as its political and economic links to the EU-15 economic core. In this respect, the paper offers some new insights on the dynamics of global investment in the EU neighbourhood. While this region is relatively under-explored in the existing literature on FDI, its importance from a policy perspective is rapidly increasing. Policy-makers at the EU and national level are especially interested in gaining a better understanding of FDI patterns (and their drivers): the European Neighbourhood Policy and the intensification of economic and institutional relationships with other important actors in the area (such as the Russian Federation and Turkey, among others) have made apparent the huge potential of the entire region in terms of future economic development and integration through global value chains. Furthermore, the attractiveness of these economies for international investment is of special interest because of their relatively recent access to global markets that has often been coupled with (or mediated by) a close relationship with the European Union, making them unique case studies for the analysis of the interaction between globalisation and regionalisation processes. As a consequence, from the standpoint of academic research, the investigation of MNE behaviour in terms of investment strategies in the EU neighbourhood has a particular relevance for a better understanding of the economic, social and geographical processes that connect global and local actors.

This paper is based on data on individual greenfield investments in the EU neighbourhood over the 2003-2008 period and investigates three main aspects of the interaction between recipient countries and global capital flows. First, the analysis aims to single out which national characteristics are relevant for attracting global FDI into the EU neighbourhood. Second, the paper examines the role of different FDI

determinants across sectors and business activities in order to shed new light on the heterogeneous effect of different characteristics of the recipient economies on investments of different nature. Third, the analysis investigates whether FDI originating from different areas of the world responds differently to national features and concentration patterns.

The next section provides a brief overview of the empirical research that has explored FDI determinants in the EU neighbourhood, while Section 3 offers a detailed picture of FDI patterns in this area. Section 4 introduces the drivers of FDI considered in the econometric section and explains the methodology. The main findings are presented and discussed in Section 5, whilst Section 6 concludes.

1.2 Literature background: the drivers of FDI into the EU neighbourhood

In recent years, the intensity of the political and economic relations between the EU-15 and its neighbouring countries has increased substantially. However, the EU relations with its neighbours have been far from homogeneous, considering the remarkable differences among these countries. Some ex-socialist Central and Eastern European countries (CEECs) succeeded in joining the Union in the enlargement rounds of 2004 and 2007, while others are still candidate to accession. In addition, a heterogeneous group of countries geographically bordering the EU has become part of the so-called European Neighbourhood Policy, a unified framework aiming at generating peaceful and collaborative relationships between the EU and its border countries (Commission of the European Communities, 2004).

Notwithstanding the variety of economies involved – to different degrees – in this process, the attention of most existing studies on FDI and their determinants in the area has been focused on CEECs (i.e. the countries that gained full EU membership in the 2000s and that are here called New Member states – NMs).[4] Most existing studies looked at FDI flows in the NMs in order to understand whether (and to what extent) increasing economic integration can influence FDI drivers. The reason for the special attention devoted to this sub-group of countries by the existing academic literature is threefold. First, the EU enlargement has provided scholars with unprecedented settings for the study of FDI patterns. Second, these analyses responded to the widespread concerns for the growing de-localisation (and potential job loss) away from the 'old' EU members in favour of CEECs (e.g. Boeri and Brücker, 2001). The third reason is related to data availability: not only NMs have received a much larger share of FDI than all other countries in the EU neighbourhood, but empirical analyses have also been fuelled by more accessible and comparatively more reliable data.

What emerges from the literature on the determinants of FDI in NMs is that internal demand, market potential and labour costs are fundamental aspects that foreign firms consider in their investment decisions (Resmini, 2000; Carstensen and Toubal, 2004; Janicki et al., 2004; Bellak et al., 2008). Other relevant elements for FDI attraction include proximity to the EU (Bevan and Estrin, 2004), deepening economic integration (Brenton et al., 1999), good institutions (Bevan et al., 2004) and tax incentives (Bellak and Leibrecht, 2009). Interestingly for the aims of the present paper, Resmini (2000) develops an empirical model taking into account sectoral differences in attracting FDI in NMs: her findings suggest that the responsiveness of FDI to national

[4] As Croatia joined the EU on the 1st of July 2013, in this paper it is considered Accession country and included in the ACC group.

characteristics differs substantially across industries. This insight is corroborated by the results of Pusterla and Resmini (2007), showing that sector-specific drivers influence the investment decisions of foreign companies in NMs. The present paper offers a similar perspective for countries of the EU neighbourhood, further extending the analysis to business functions, following Crescenzi et al. (2014).

In sharp contrast with the abundance of studies on NMs, FDI patterns in the EU neighbourhood are much less explored in the literature. The limited number of studies on the area converges in suggesting that 'traditional' FDI determinants matter the most in this context. For instance, studies on the subnational determinants of FDI in Turkey suggest that local demand and agglomeration forces are very relevant drivers of FDI (Deichman et al., 2003). FDI in the Balkan region tends to be encouraged by low labour cost (Louri et al., 2000) and political and economic reforms (Sergi, 2004). Some contributions have investigated the determinants of FDI in the Middle East and Northern Africa (MENA) countries, showing that growing markets, human capital and low risk environments exert a strong attractive influence on global investment (Moosa, 2009). The role of market size, trade opportunities and institutional variables, along with the availability of natural resources, is confirmed by other studies on FDI in MENA countries (Hisarciklilar et al., 2006; Mohamed and Sidiropoulos, 2010). Recent work by Zvirgzde et al. (2013) on Ukrainian survey data argues that FDI in the capital region are mostly market-seeking, and also motivated by institutional factors, while FDI in western areas are attracted by the proximity to the EU. A strong market-oriented rationale for FDI is also found by studies on Russia (Fabry and Zeghni, 2002; Ledayeva, 2009); in addition, in the latter case FDI is motivated by both resource-seeking strategies and availability of physical infrastructure such as sea ports (Ledayeva, 2009).

Overall, although the literature on FDI determinants has devoted limited attention to the EU neighbourhood, at least in comparison to other emerging areas such as China, India or Latin America, existing contributions point out that most FDI in the region follows market and/or efficiency-seeking rationales.

1.3 Stylised facts on FDI in the EU neighbourhood

In order to broaden the perspective of the existing literature and cover both the EU NMs and the broadly defined neighbourhood of the Union this paper makes use of homogenous and comparable data on individual investment projects undertaken by MNEs in 34 countries in the period 2004-2008.[5] The source of data is *FDi Markets-Financial Times Business*, which represents an increasingly exploited tool of analysis in the literature on FDI determinants and location choices (e.g. Crescenzi et al., 2014).[6] Greenfield investments from the entire world into the EU NMs and neighbourhood are used to investigate country-level drivers of FDI decisions. In what follows we present some descriptive evidence in order to contextualize the subsequent empirical analysis.

[Table 1.1 here]

[5] Although *FDi Markets* provides data since 2003, in the present work we consider only the period 2004-2008. This is due to the econometric exercise requiring lagged independent variables for which data are not available prior 2003 (see Section 4 below).

[6] FDI is identified by Financial Times' analysts through a wide variety of sources, including nearly 9,000 media sources, project data provided from over 1,000 industry organisations and investment agencies, and data purchased from market research and publication companies. Furthermore, each project is cross-referenced across multiple sources and more than 90% of investment projects are validated with company sources. The dataset is by construction a sample of global FDI, and it is therefore likely to be skewed towards the larger firms and projects. However, Crescenzi et al. (2014) show that investment decisions captured by this database are highly correlated with other macro-level data on FDI from UNCTAD and the World Bank.

As is mentioned above, the EU neighbourhood, as considered here, is a highly heterogeneous region. NMs have joined the EU in two subsequent enlargement rounds in 2004 and 2007, ACC are EU candidate or potential candidate, while a large group is involved in the ENP, with the exception of Russia. These different degrees of integration with the EU signal the large variation in economic and political features across the region, as well as in the extent of attractiveness towards global capital flows.

Table 1.1 reports new foreign investments undertaken in the EU neighbourhood over the period 2004-2008 by global MNEs. Over half of total FDI flows in the area are directed to NMs (52.18%), while ACC, ENP Southern and ENP Eastern economies all exhibit lower and similar shares: 10.03%, 11.92% and 8.0%, respectively. A relevant share is, instead, targeting Russia, which receives 18.11% of total global FDI directed in the area. Considering individual countries rather than groups, Russia is the most attractive destination for FDI, followed at large distance by Romania (11.91%), Poland (9.26%) and Hungary (7.16%). In the ACC group, Turkey and Serbia are the most preferred destinations, with 3.87% and 2.68% respectively.

In the ENP Southern region, Morocco and Egypt play a leading role with 2.39% and 2.25% of total FDI, whilst in the ENP Eastern region Ukraine attracts the great majority of investments with 4.67% of the total. Figure 1 provides a graphical representation of global FDI distribution in the EU neighbourhood over the period 2004-2008.

[Figure 1.1 here]

There are different motives behind investment decisions and they are intimately connected to the functions and sectors in which MNEs operate their foreign activities. Although the original dataset reports several typologies of business functions and a large number of industrial sectors,

due to the low number of observations in some countries for certain activities and industries, data are aggregated into three groups of business functions and two broad economic sectors. With respect to the former, Table 1.2 presents figures on investment in the following broad functional categories: (i) Headquarter and Innovation activities (HQ & Inno); (ii) Sales, Marketing, Logistic and Distribution (SMLD) and (iii) Production. Table 1.3 instead provides an outlook on the macrosectoral aggregations: (i) Manufacturing and (ii) Services.

Table 1.2 shows that NMs attract the large majority of FDI in all business functions. However, Russia remains the single most important country in terms of attractiveness across all functions. Surprisingly, ENP Southern countries receive a relatively large share of FDI in Headquarters and Innovative activities (16.7%), due in particular to the large role played by Israel (3.8%). Among NMs, Romania attracts the largest share of FDI in all business functions, while Turkey and Serbia lead the ACC group. As far as ENP Eastern is concerned, Ukraine unsurprisingly plays the most relevant role. What emerges from these figures is that global FDI tends to be concentrated in a few locations across the EU neighbourhood, and that variations in foreign investors' preferences exist according to different business functions. For instance, Poland is one of the main destinations of global FDI in the area, but only 5.9% is in Headquarters and Innovation, while the share almost doubles when looking at FDI in Production activities.

[Table 1.2 here]

Table 1.3 reports the distribution of FDI towards the EU neighbourhood for the two industrial macro-aggregates, which also show remarkable differences. FDI in manufacturing concentrates in NMs (56.3%), whilst the attractiveness of ENP Eastern, ENP Southern and ACC groups in this respect is relatively weak (5.8%, 8.7% and 9.5%,

respectively); the Russian Federation alone attracts 19.7% of manufacturing FDI. As far as service activities are concerned, the shares of ENP Southern and ENP Eastern are higher (14.8% and 9.9% respectively) while NMs still attract about half the volume of service FDI (47.9%).

[Table 1.3 here]

1.4 FDI in the EU neighbourhood: methodology

In order to investigate the role (and relative importance) of national characteristics for the attraction of FDI in the EU neighbourhood, this paper relies upon regression techniques. In particular, following the literature on the quantitative analysis of MNE location, the empirical analysis relies on a count data model where national characteristics explain the number of FDI projects received by each country in each year.[7] With a count response variable, it is customary to employ a Poisson regression technique. However, we detect over-dispersion in our count variable, which makes this methodology less appropriate: we therefore apply a negative binomial model, which allows us to adjust estimates for over-dispersed data[8] [9]. The time span covers the period 2004-2008 and includes a total of 11,262 greenfield FDI. In line with the relevant literature, independent variables enter the analysis with a one-year lag, as specified below. Thus, data for 2003 are employed to construct lagged explanatory variables.

[7] Alternatively, a conditional logit model can be adopted, as common in similar studies. Nevertheless, the equivalence of the coefficients provided by these classes of models is well established in the literature (Guimarães et al., 2003).

[8] An additional problem with count data models can derive from the large number of zeros in the data. However, this is not a relevant issue in our dataset.

[9] We also run a Poisson regression (not reported here) which confirmed the main results of the Negative Binomial.

The following empirical model is estimated:

$$FDI_{it} = f(demand_{it-1}, institutions_{it-1}, labour_{it-1}, colocation_i, P_i)$$

Where:

FDI_{it} is the count of foreign investment in destination country i in year t.

$Demand_{it-1}$ represents internal market size and external market potential (MP) of country i in year $t-1$; both variables enter the model in log form. The size of the market in the host economies is viewed as a major driver of FDI (e.g. Wheeler and Mody, 1992; Billington, 1999). The larger the national market in the recipient country, the larger the local demand for goods and services and, consequently, market opportunities for the investor. National GDP at constant prices (US dollars 2005) is included as a proxy, with one-year lag, and comes from the World Development Indicators (WDI) of the World Bank.

FDI might also be aimed at exploiting external market potential (e.g. Head and Mayer, 2004; Carstensen and Toubal, 2004): in other words, some countries can play the role of platforms for exports towards other proximate locations. In order to control for countries' external market potential we follow the literature (Harris, 1954) and compute the following indicator:

$$MP_{it-1} = \sum_{c \neq i} \left({GDP_c}/{d_{ic}} \right)$$

where market potential (MP) of location i is the distance-weighted internal demand of neighbouring countries c. This indicator is included in the analysis with a one-year lag.

Institutions$_{it-1}$ stands for 'Control of corruption' in country *i* in year *t-1*.

This part of the model tests whether FDI is sensitive to national institutional environments, which are highly heterogeneous in the EU neighbourhood. Institutions are proxied with a measure that captures a very relevant aspect of the national environment when considering the strategies of foreign investors, namely 'Control of corruption' as provided by the World Bank in its World Governance Indicators (WGI). As for previous variables, institutions enter the analysis with a one-year lag. As is suggested by the existing literature, we expect that good institutional quality plays a positive role in attracting foreign capital since it increases certainty in market transactions and stability (e.g. Altomonte, 2000; Wei, 2000; Bénassy Quéré et al., 2007).

Labour$_{it-1}$ includes proxies for the education level and average wage in country *i* in year *t-1*. This section of the model looks at the characteristics of the workforce and labour market. First, a measure of the average education level in the host economy is included, that is the ratio between secondary school age population and total population provided by UNESCO. This is the only available measure of education for the countries of interest. In line with studies highlighting the beneficial effects of human capital on FDI attraction, we expect that this indicator is positively linked to inward FDI (Noorbakhsh et al., 2001). Second, we include per capita GDP as a proxy for average wage employing data on GDP and population from WDI (Alsan et al., 2006). Although this is an indirect measure for salaries, wages for most countries under observation are not available. We expect that higher values of this indicator discourage foreign investors, since saving on input costs represents a strong rationale for FDI in emerging and developing economies (Resmini, 2000).

Colocation$_{it}$ includes several stock variables for FDI in country *i* calculated as a cumulative count according to country of origin, sector and business function, all expressed in log. These variables capture the extent to which foreign investments co-locate in the same country; that is, using data at the investment level, we generate the stock of all FDI with similar characteristics to those of each specific investment (e.g. Defever, 2006). Then, when constructing our dataset at the country level, we consider the cumulative average stock of FDI in a specific country in a specific year. The *FDi Markets* database allows constructing stock measures of FDI according to (i) nationality of the investor, (ii) sector and (iii) business function. We are thus able to investigate the importance of similar FDI in determining new flows of investment, exploring FDI path-dependency along these three different dimensions. Similarly, two additional stock variables are built by crossing both sectors and business functions with information on origin countries, allowing to test whether FDI in one sector or business activity originated from a certain country attracts more FDI with similar features.

Finally, P_i is a set of country dummies included in order to account for any factor not explicitly controlled for in the model that might have an effect on countries' attractiveness towards global FDI. These include any time-invariant country-level driver of FDI such as geographical and cultural characteristics. The full list of variables is reported in Appendix A.

1.5 Results

The first objective of our empirical exercise is to analyse the relevance of different FDI determinants in the EU neighbourhood. Therefore, we estimate a negative binomial model by including all FDI directed towards the 34 countries in the area of interest over the period 2004-2008.

[Table 1.4 here]

The results of this first estimation are reported in Table 1.4. The coefficients are mostly in line with expectations, and consistent across different model specifications. Traditional drivers of FDI, such as size of the internal market and external market potential, are strongly and positively correlated with the decision to undertake new investments. This confirms that global FDI flows towards the EU NMs and neighbourhood have a prominent market-seeking rationale. In other words, MNE strategies in the area are strongly based upon market access considerations in terms of both the exploitation of domestic demand in the recipient economies and the opportunity to constitute platforms for exports towards third countries (see Neary, 2007). As far as the national institutional environment is concerned, 'Control of corruption' exhibits a positive and weakly significant relationship with FDI in only two specifications out of five: overall, according to this first set of results, global investors do not appear overly concerned about choosing locations where the institutional setting confers stability to their operations and transactions.

With respect to workforce characteristics, the model does not detect any relevant relationship between FDI and education level, indicating that, in general, MNEs do not invest in the EU neighbourhood in order to take advantage of local competences. Conversely, our proxy for wage levels reveals that investors look for cheap labour in the region. The robustness of the coefficient on this feature across all specifications suggests an efficiency-seeking rationale for foreign companies investing in the area. This indicates that the conclusions reached by previous studies arguing that cost-saving on labour is among the main drivers for FDI in CEECs (Resmini, 2000) may be extended to the broader EU neighbourhood.

As far as FDI path-dependency is concerned, we enter the different colocation variables separately given the high level of correlation among them. The first three columns test the relevance of colocation patterns associated with common nationality of the investor, sector and business function respectively. Columns 4 and 5, instead, test the effect of colocation of FDI in the same sector and business by nationality. Results in Table 1.4 suggest that FDI tends to follow previous investment flows with similar features, with the only exception of functional colocation. Moreover, regressions in columns 4 and 5 indicate that FDI from the same country of origin tends to select the same location according to their sector and business activity performed abroad.

Foreign investment might be motivated by different determinants depending on the specific function operated abroad or the particular sector in which the FDI is undertaken. Therefore, we run separate regressions for the three types of business functions (Table 1.5) and the two macro-aggregates of economic activity (Table 1.6).

[Table 1.5 here]

As is shown in Table 1.5, when considering the number of FDI in specific business functions as response variable, FDI patterns are significantly associated with a smaller number of determinants, which are particularly important for a specific function. Therefore, in the case of 'HQ & Inno', the education level of countries appears to be the main relevant driver of FDI. This is not surprising considering that activities in 'HQ and Inno' are likely to be related to higher skill-intensity. Conversely, in the case of 'SMLD' results suggest that a lower level of education is attractive of FDI, plausibly signalling that these activities require less skilled workers. As far as Production activities are concerned, a

favourable institutional environment plays a major role in driving FDI patterns in the EU neighbourhood. With respect to colocation variables, path-dependency in FDI inflows emerges clearly in the case Production. This is not surprising considering that production activities are likely to be associated with the occurrence of agglomeration economies and localised backward and forward linkages. However, in the case of 'HQ & Inno' the coefficients turn out to be negative and significant: this might be due to the fact that, while corporate headquarters tend to concentrate in large urban agglomerations (particularly capital cities) mainly for political networking and lobbying reasons, this is not normally the case for innovation activities (Iammarino and McCann, 2015). Previous research has shown that MNE technological and innovation operations are unlikely to be located in the vicinity of those of competitive rivals (see, among others, Cantwell and Santangelo, 1999; Alcácer, 2006; Verbeke et al., 2009) and tend rather to follow the location of production operations (Defever, 2006) or to reflect a value chain logic (Crescenzi et al. 2014)

[Table 1.6 here]

Table 1.6 presents results of negative binomial estimates by macrosector. Interestingly, and not entirely unexpectedly, the signs of the significant coefficients are opposite in manufacturing and services, a plausible outcome in the set of countries that constitute the EU neighbourhood. As far as manufacturing industries are concerned, the strong and negative significance of the education level signals that foreign MNEs tend to look for low-skilled workforce, reasonably because the kind of manufacturing activities localised in the EU neighbourhood by MNEs is mostly concentrated in the more basic segments of the value chain. Differently, service activities are associated with a more educated workforce in relation to the nature itself of the service sector, which

requires relative higher standards of skills than basic manufacturing. Table 1.6 also suggests that the institutional setting of the host countries matters for FDI decisions, again with different signs in the two aggregates considered. In particular, manufacturing activities are associated with less favourable institutional conditions: this, particularly in the case of emerging and developing economies such as those in the EU neighbourhood, might be explained by cross industry heterogeneity in MNEs' preferences over institutional attributes. In other words, it has been argued that some MNEs tend to prefer locations with weaker economic institutions because they aim at bypassing transparent market mechanisms in their operations abroad (e.g. Helmann, 1998; Helmann et al., 2000; Glaeser and Shleifer, 2002; Sonin, 2003). Indeed, weaker institutions might facilitate rent-seeking or moral hazard behaviour, or simply allow capturing a share of host countries' public resources, through lobbying, subsidies or less legalized channels – such as, in the case here, corruption. Such MNE behaviours has proved to differ across sectors and functions: previous research has shown that MNEs in high or medium technology manufacturing choose to locate in places where the institutional environment is more adequately protected, while MNEs operating in low-technology and less sophisticated sectors may consider strong regulation in business as an obstacle.[10] Hence, mechanisms of institutional subversion (Helmann, 1998) might be easily reflected in our results for manufacturing considering the highly heterogeneous group of countries analysed, that include both transition and developing countries, often characterised by notable institutional flaws. On the contrary, the institutional environment takes the expected positive sign when the analysis shifts to FDI in services, which include operations aiming to provide financial and business services, soft infrastructure and more knowledge-intensive content activities – as also the attractiveness

[10] To be noted that our manufacturing aggregate includes also extraction and processing of coal, oil and natural gas, which may prove particularly reactive to less regulated institutional settings.

of stronger human capital in the sector seems to point out – and that tend to take into consideration business regulation, transparency and enforcement of contracts as pre-requisites for their location.

1.6 Conclusions

This paper aimed at providing a first investigation of the drivers of global FDI in the broadly defined EU neighbourhood. The area constitutes an interesting case in terms of attractiveness towards global MNE investments, both for its geographical closeness and its political and economic linkages with the 'core' of the European Union. The different degrees of integration with the EU, and the relatively recent access of most neighbourhood countries to global markets, reflect their large heterogeneity in terms of economic, social and political characteristics, which also entails large variation in their attractiveness towards foreign capital.

By employing data on greenfield investment projects occurred in the EU NMs and neighbourhood in the period 2003 to 2008, we explored the drivers of FDI by sector and business function. What emerges from the general empirical analysis is a clear market-seeking and efficiency-oriented rationale behind FDI in the EU neighbourhood. Interestingly, strong co-location patterns of FDI appear along different axes – national origin of the investor, industrial sector, and business function – supporting the existence of path-dependency, cumulative causation mechanisms and possible virtuous (or vicious) cycles in the impact of globalisation on the EU neighbourhood.

The findings of this paper are largely in line with previous empirical evidence highlighting the significance of global capital flows towards EU NMs as compared to other areas in the EU neighbourhood. In fact, EU NMs are characterised by large and growing internal demand, a comparatively stable institutional environment, and relatively low labour

costs. Most importantly from a political point of view, they benefit from the EU membership. However, Russia is the single country that receives most foreign investment in manufacturing and services, plausibly due to the relevance of its huge internal demand for MNEs' strategies.

In interpreting our empirical results and the descriptive evidence presented, we notice that the rest of the EU neighbourhood tends to remain peripheral in the strategies of MNEs, with few exceptions represented by countries such as Turkey and Ukraine, and to a lesser extent, Egypt and Morocco. These economies are far less integrated both politically and economically with the 'core' of the EU, but they are central economic actors in their regions and it is likely that MNEs oriented towards the exploitation of new markets and low-cost labour force will look at them with growing interest.

The present study provides an initial investigation of the patterns of FDI in the EU neighbourhood which can be informative for policy makers at the EU, national and regional levels in both areas. The growing importance of the ENP and the intensification of the economic and institutional relationships between the EU and other important actors in the area, such as the Russian Federation, Turkey, the Balkans and the economies in North Africa, should be accompanied by a better understanding of the economic processes at work. In this respect, the evidence about the role of internal markets of destination and the educational levels of the workforce in attracting FDI can be framed within national and EU-wide regional and industrial policies to encourage, on the one hand, the internationalisation of European firms – particularly those in the current EU periphery – towards their neighbours and, on the other, the upgrading of skills and capabilities in the recipient economies. Policies supporting human capital and skill formation and training – at different educational levels – are indeed crucial not only to spur technological and innovation progress in the neighbourhood, but also to support shifts to higher value-added activities and skill renewal

potentially offered by offshoring to the EU peripheral regions geographically closer to the ENP area. Furthermore, improving institutional quality in the neighbourhood is imperative in order to reduce rent-seeking and inefficiencies that are detrimental to the host economies, and tend to increase internal inequality through the reinforcement of the dominant elites: enhancing the quality of institutions may also attract more sophisticated activities and reduce the current emphasis on purely market-seeking investments. Further research-based evidence is certainly needed to inform policy intervention on which specific tools are best suited to leverage global flows to upgrade local tangible and intangible assets and reinforce regional growth on both sides of the EU border.

Table 1.1: FDI into the EU neighbourhood

Country	Investment projects	%
New Member States		
Bulgaria	735	6.53
Czech Republic	651	5.78
Estonia	207	1.84
Hungary	806	7.16
Latvia	293	2.60
Lithuania	236	2.10
Malta	8	0.07
Poland	1,043	9.26
Romania	1,341	11.91
Slovakia	446	3.96
Slovenia	109	0.97
Subtotal	5,875	52.18
Accession and Candidate countries		
Albania	49	0.44
Bosnia and H.	96	0.85
Croatia	183	1.62
Macedonia	45	0.40
Montenegro	19	0.17
Serbia	302	2.68
Turkey	436	3.87
Subtotal	1,130	10.03
ENP Southern countries		
Algeria	208	1.85
Egypt	253	2.25
Israel	120	1.07
Jordan	111	0.99
Lebanon	66	0.59
Libya	88	0.78
Morocco	269	2.39
Syria	88	0.78
Tunisia	137	1.22
Subtotal	1,340	11.92
ENP Eastern countries		
Armenia	47	0.42
Azerbaijan	113	1.00
Belarus	80	0.71
Georgia	69	0.61
Moldova	43	0.38
Ukraine	526	4.67
Subtotal	878	8.00
Russia	2,039	18.11
Total	11,262	100

Source: Authors' elaborations on FDi-Markets data

Table 1.2: FDI into the EU neighbourhood by business function

Country	HQ & Innovation		SMLD		Production	
	Investment	%	Investment	%	Investment	%
New Member States						
Bulgaria	82	4.5	328	6.9	325	6.9
Czech Republic	101	5.6	271	5.7	279	5.9
Estonia	34	1.9	103	2.2	70	1.5
Hungary	118	6.6	349	7.3	339	7.2
Latvia	25	1.4	191	4.0	77	1.6
Lithuania	28	1.6	153	3.2	55	1.2
Malta	1	0.06	3	0.06	4	0.08
Poland	107	5.9	394	8.3	542	11.5
Romania	223	12.4	568	12.0	550	11.7
Slovakia	48	2.7	159	3.4	239	5.1
Slovenia	14	0.8	65	1.4	30	0.6
Subtotal	781	43.1	2,584	59.4	2,510	53.3
Accession and Candidate countries						
Albania	9	0.5	19	0.4	21	0.5
Bosnia and H.	13	0.7	32	0.7	51	1.1
Croatia	16	0.9	94	2.0	73	1.6
Macedonia	3	0.2	9	0.2	33	0.7
Montenegro	1	0.06	8	0.2	10	0.2
Serbia	52	2.9	119	2.5	131	2.8
Turkey	91	5.1	171	3.6	174	3.7
Subtotal	185	10.2	452	10.4	493	10.5
ENP Southern countries						
Algeria	50	2.8	77	1.6	81	1.7
Egypt	43	2.4	91	1.9	119	2.5
Israel	69	3.8	30	0.6	21	0.5
Jordan	23	1.3	44	0.9	44	0.9
Lebanon	15	1.3	33	0.7	18	0.4
Libya	18	1.0	18	0.4	52	1.1
Morocco	33	1.83	104	2.2	132	2.8
Syria	20	1.1	18	0.4	50	1.1
Tunisia	32	1.8	33	0.7	72	1.5
Subtotal	303	16.7	448	10.3	589	12.5
ENP Eastern countries						
Armenia	19	1.1	14	0.4	14	0.3
Azerbaijan	32	1.8	50	1.1	31	0.7
Belarus	19	1.1	45	1.0	16	0.3
Georgia	17	0.9	32	0.7	20	0.4
Ukraine	132	6.5	237	5.0	168	3.6
Moldova	4	0.2	14	0.3	14	0.3
Subtotal	223	12.3	392	9.0	263	5.6
Russia	319	17.6	866	19.9	854	18.1
Total	1,811	100	4,350	100	4,709	100

Source: Authors' elaborations on FDi-Markets data

Table 1.3: FDI into the EU neighbourhood by macro-sector

Country	Manufacturing		Services	
	Investment	%	Investment	%
New Member States				
Bulgaria	358	6.0	323	6.8
Czech Republic	401	6.7	226	4.8
Estonia	112	1.9	90	1.9
Hungary	476	7.9	292	6.2
Latvia	174	2.9	117	2.5
Lithuania	125	2.1	100	2.1
Malta	6	0.1	2	0.04
Poland	605	10.1	413	8.7
Romania	748	12.5	552	11.6
Slovakia	310	5.2	125	2.6
Slovenia	59	1.0	43	0.9
Subtotal	3,374	56.3	2,283	47.9
Accession and Candidate countries				
Albania	18	0.3	23	0.5
Bosnia and H.	48	0.8	48	0.8
Croatia	100	1.7	100	1.7
Macedonia	16	0.3	19	0.3
Montenegro	3	0.05	3	0.05
Serbia	171	2.9	122	2.6
Turkey	214	3.6	200	4.2
Subtotal	570	9.5	515	10.8
ENP Southern countries				
Algeria	89	1.5	102	2.2
Egypt	102	1.7	127	2.7
Israel	49	0.8	65	1.4
Jordan	44	0.7	65	1.4
Lebanon	18	0.3	47	1.0
Libya	21	0.4	39	0.8
Morocco	108	1.8	152	3.2
Syria	25	0.4	48	1.0
Tunisia	68	1.1	61	1.3
Subtotal	524	8.7	706	14.8
ENP Eastern countries				
Armenia	14	0.2	26	0.6
Azerbaijan	35	0.6	64	1.4
Belarus	31	0.5	46	1.0
Georgia	17	0.3	39	0.8
Moldova	19	0.3	20	0.4
Ukraine	229	3.8	276	5.8
Subtotal	345	5.8	471	9.9
Russia	1,180	19.7	792	16.7
Total	5,993	100	4,767	100

Source: Authors' elaborations on FDi-Markets data

Table 1.4: FDI determinants into the EU neighbourhood

Dep Var: FDI count	(1)	(2)	(3)	(4)	(5)
Market size	2.80***	2.89***	2.74***	3.21***	3.11***
	(0.909)	(0.936)	(0.917)	(0.846)	(0.866)
Market potential	2.64**	2.62**	2.91***	2.12**	2.47**
	(1.103)	(1.124)	(1.094)	(0.999)	(1.027)
Control of corruption	0.47*	0.43	0.44	0.39	0.44*
	(0.273)	(0.274)	(0.278)	(0.248)	(0.260)
Education level	1.28	1.33	1.28	1.11	1.27
	(0.848)	(0.876)	(0.890)	(0.757)	(0.786)
Average wage	-3.15***	-3.18***	-3.10***	-3.49***	-3.53***
	(0.863)	(0.879)	(0.874)	(0.803)	(0.811)
National colocation	0.004**				
	(0.0016)				
Sector colocation		0.004**			
		(0.00214)			
Function colocation			0.001		
			(0.000781)		
Sector colocation by nationality				0.062***	
				(0.0124)	
Function colocation by nationality					0.027***
					(0.00660)
Observations	170	170	170	170	170
National dummies	Yes	Yes	Yes	Yes	Yes
Pseudo R-squared	0.28	0.28	0.28	0.30	0.29
log likelihood	-573.4	-573.8	-574.7	-564.7	-569.1

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 1.5: FDI determinants in the EU neighbourhood by business function

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Dep Var: FDI count		HQ & Inno			SMLD			Production	
Market size	9.11	8.15	8.90	-1.11	-1.16	-1.29	-0.96	-0.087	-0.37
	(6.577)	(6.321)	(6.500)	(5.929)	(6.122)	(6.273)	(3.141)	(3.187)	(3.156)
Market potential	-1.21	-1.24	-2.84	-5.77	-5.87	-6.07	1.20	0.10	0.65
	(5.315)	(5.179)	(5.285)	(6.632)	(6.911)	(6.949)	(3.552)	(3.484)	(3.451)
Control of corruption	0.56	0.69	0.44	-1.02	-0.91	-0.92	2.27**	2.10**	2.22**
	(1.323)	(1.334)	(1.328)	(0.995)	(0.986)	(0.987)	(0.992)	(1.001)	(0.998)
Education level	14.24***	15.19***	14.25***	-3.60**	-3.64**	-3.74**	3.11	4.88	5.17
	(4.476)	(4.775)	(4.580)	(1.624)	(1.639)	(1.648)	(3.588)	(3.624)	(3.555)
Average wage	6.36	9.57	9.39	2.71	2.56	2.77	0.43	-0.05	-0.09
	(6.390)	(7.011)	(7.111)	(3.785)	(3.823)	(3.903)	(2.307)	(2.312)	(2.330)
National colocation	-0.02			-0.01			0.01		
	(0.012)			(0.009)			(0.010)		
Sector colocation		-0.04**			-0.01			0.025*	
		(0.02)			(0.011)			(0.014)	
Function colocation			-.015***			-0.002			0.011**
			(0.005)			(0.003)			(0.005)
Observations	170	170	170	170	170	170	170	170	170
National dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R2	0.28	0.30	0.30	0.16	0.16	0.16	0.15	0.16	0.16
log likelihood	-56.40	-55.30	-55.34	-100.1	-100.2	-100.2	-95.21	-94.57	-94.38

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 1.6: FDI determinants in the EU neighbourhood by macro-sector

	(1)	(2)	(3)	(4)	(5)	(6)
Dep Var: FDI count	Manufacturing			Services		
Market size	-1.96	-1.63	-1.61	4.06	4.13	4.26
	(3.725)	(3.737)	(3.720)	(3.832)	(3.688)	(3.683)
Market potential	-2.37	-2.92	-2.91	0.43	0.45	0.11
	(3.745)	(3.755)	(3.639)	(3.154)	(3.059)	(3.106)
Control of corruption	-3.19***	-3.16***	-3.15***	1.55**	1.51**	1.46*
	(0.923)	(0.930)	(0.933)	(0.776)	(0.750)	(0.754)
Education level	-5.00***	-4.75**	-4.71**	4.22**	4.33**	4.28**
	(1.919)	(1.983)	(2.000)	(2.012)	(2.016)	(2.015)
Average wage	0.67	0.47	0.44	-1.93	-1.49	-1.15
	(2.374)	(2.365)	(2.385)	(3.157)	(3.133)	(3.155)
National colocation	-0.003			-.0004		
	(0.007)			(0.010)		
Sector colocation		0.001			-0.008	
		(0.009)			(0.012)	
Function colocation			0.0004			-0.004
			(0.003)			(0.004)
Observations	170	170	170	170	170	170
National dummies	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R2	0.16	0.16	0.16	0.12	0.12	0.12
log likelihood	-104.4	-104.4	-104.4	-107.9	-107.8	-107.7

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, *p<0.1

Appendix A

Table A.1: List of variables

Variable	*Description*	*Source*
	Dependent	
FDI_{it}	Count of FDI in country *i* at time *t*	FDi Markets
	Independent	
Demand		
Market $Size_{it-1}$	GDP of country *i* at time *t-1.*	WDI
Market $Potential_{it-1}$	Sum of distance-weighted GDP of all third countries *c* from location *i* at time *t-1*.	WDI / CEPII
Institutions		
Control of $Corruption_{it-1}$	Composite indicator ranging from -2.5 to 2.5, with higher values associated to more control of corruption in country *i* at time *t-1*.	WGI
Labour		
Education $Level_{it}$	Ratio between secondary school age population and total population in country *i* at time *t-1*.	UNESCO
Average $Wage_{it}$	Per capita GDP in country *i* at time *t-1*.	WDI
Co-location		
National Co-$location_{it}$	Cumulative average stock of investment in country *i* from the same country of origin.	FDi Markets
Sector Co-$location_{it}$	Cumulative average stock of investment in country *i* in the same sector of activity.	FDi Markets
Function Co-$location_{it}$	Cumulative average stock of investment in country *i* in the same business function.	FDi Markets
Sector Co-$location_{it}$ by nationality	Cumulative average stock of investment in country *i* in the same sector of activity from the same country of origin.	FDi Markets
Function Co-$location_{it}$ by nationality	Cumulative average stock of investment in country *i* in the same business function from the same country of origin.	FDi Markets

Chapter 2 – What drives European multinationals to the EU neighbouring countries? A mixed methods analysis of Italian investment strategies

2.1 Introduction

The progressive enlargement of the European Union (EU) has made the economic and political relationships with its neighbours a highly sensitive policy issue. With the EU Enlargement the security, political stability and economic prosperity of larger shares of the Union are progressively more intertwined with that of Candidate and Neighbouring countries. Following the 2004 and 2007 eastward enlargements, the European Neighbourhood Policy (ENP) and other regional and multi-lateral cooperation initiatives (Eastern Partnership; the Euro-Mediterranean Partnership; the Black Sea Synergy and the EU-Russia strategic partnership) have been aimed at strengthening the links between the EU and its neighbourhood in institutional, political, social and economic terms. The sharp increase in trade flows (according to the European Commission total trade between the EU and its ENP partners was worth € 230 billion in 2011) and labour mobility (the EU issued 3.2 million Schengen visas to ENP partners in 2012) has been accompanied by a generalized increase in Foreign Investments in particular towards the ENP-South countries. Before the 2007 economic crisis, FDI in the Mediterranean region accounted for 2.8% of the world total (2006) while investments in Eastern countries remained largely concentrated in Ukraine, ranging between 0.5 and 1% of the world total (DRN, 2013): the EU accounts on average for 34% of total investments in the Mediterranean countries (while no comparable data are available for

Eastern countries, but EU FDI account for around 80% of the total in Ukraine) (DRN, 2013).

While "corruption has been identified as a major obstacle to investment and business, both in eastern and southern ENP countries" (European Commission, 2013: 10), very limited systematic research has been conducted so far on the relative importance of other investment drivers/barriers that might play an important role in this emerging context. Corruption and poor institutional quality remain fundamental cross-country issues for the entire region (see Chapter 3 for a more detailed discussion of this), but market-seeking (associated with increasing market size), resource-seeking and efficiency-seeking (associated with cheap skilled labour) motives remain strong countervailing pull factors that interact with geographical and (increasing) institutional proximity, sustaining the increasing flow of EU investments in the region.

This paper aims to shed new light on the strategic decisions of European MNEs when balancing the repulsive and attractive forces that shape the geography of their investments in the EU neighbouring countries (NCs) and in the 'new' member states (NMs) of the EU. The coverage of 33 destination countries among NCs and European NMs[11] makes it possible to analyse the full spectrum of economic and institutional integration with the 'core' of the EU-15, from the full economic and political integration into the Union and the single market of the NMs, to the looser association of the ENP East and South. In terms of origin of the investments the focus of the paper will be on the case of Italy. The focus on investments originating from one single country will make possible to 'net out' any 'home market' bias in MNE behaviour,

[11] In this paper NCs are (i) Accession and Candidate Countries (ACC): Albania, Bosnia and Herzegovina, Croatia, Macedonia, Montenegro, Serbia and Turkey; (ii) ENP Southern countries: Algeria, Egypt, Israel, Libya, Lebanon, Morocco, Syria and Tunisia; (iii) ENP Eastern countries: Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine; and (iv) Russian Federation. EU NMs are all 2004 and 2007 European enlargement countries except Cyprus.

allowing us to compare their strategies with reference to the highly diversified context of the NCs and NMs. The case of Italy is particularly appropriate for this purpose: Italy is a founding member of the European Union that forms part of the 'core' of the Union but, at the same time, benefits from closer geographical proximity with both NMs and NCs than other 'old' EU members. In addition, Italian foreign and commercial policies have historically devoted a special attention to the role of the country as a 'bridge' between the 'Old' Europe and the EU neighbourhood (Bank of Italy, 2000)

The analysis of investment strategies in both NMs and NCs needs to take into account not only the variety of contextual conditions of the host economies but also the diversity of the entry modes of foreign firms into the local markets (European Commission, 2014). As a consequence, this paper will adopt a mixed methods approach to the analysis of the location strategies of Italian investments in the area. Drawing on Dunning's Ownership-Localization-Internalization (OLI) eclectic paradigm, the paper uses regression analysis in order to assess the different role of national drivers in affecting Italian greenfield investments' location behaviour. This section of the analysis is based on detailed data at the level of individual investment project. However, in order to capture the complex interaction between greenfield investments and other entry modes (in particular joint ventures and acquisitions) the quantitative analysis is complemented by two in-depth firm-level case studies covering two of the largest Italian multinational enterprises operating with different modalities in both the EU NMs and NCs areas. Interviews are collected at the level of headquarters with top level managers and executives, presenting a rich informative basis on the strategic behaviour and organisational choices of MNEs in their cross-border operations in NCs and NMs.

In terms of contribution to the existing debate, the paper rests on the idea that MNE investments play a central role in the on-going process of integration between the EU and its neighbouring countries. Such a critical role has been rarely investigated with mixed methodologies, which instead offer the opportunity to analyze more in-depth the interaction between patterns of economic integration and business strategies of MNEs. Therefore, the contribution of the present study is essentially empirical. In this respect, the paper aims at providing a structured analysis of associations between recipient countries' attributes and corporate behavior in the quantitative part, fundamentally assessing the role of location advantages (L) of the eclectic OLI paradigm to motivate Italian MNEs to pursue internalization (I) strategies. Subsequently, the qualitative section of the article zooms into the investment behavior of two selected Italian multinationals, capturing the full complexity that is typical of MNE organizational choices and that is rarely incorporated in existing quantitative studies. In this respect, we are also able to explore MNE characteristics as drivers of their location choices, with the aim of capturing the forms of ownership advantages (O) that lead to internalization (I). Therefore, by combining quantitative and qualitative insights in a novel way, this article provides new empirical evidence on the location strategies of MNEs taking into account the interdependence between the different components of Dunning's OLI paradigm, that is destination country determinants and firm-level organizational features that drive cross-border corporate strategies.

The main findings of the mixed-methods analysis for Italian MNEs in the EU neighbourhood suggest that, while some common elements for localisation – such as market access considerations as well as sensitivity to cost factors – can be generalised, there is evidence of an intrinsic heterogeneity in the strategies of MNEs along sector and functional axes, ranging from the role of inter-governmental agreements to the importance of institutional assimilation of the MNE in the local context.

This diversity across corporate strategies suggests that the development of 'framework conditions' within the picture of further integration between the EU and its neighbourhood is at least as important as the reinforcement of more typical FDI attractors.

The paper is organised as follows. The next section briefly outlines the characteristics of Italian foreign investment in EU NMs and NCs. Section 3 introduces the quantitative analysis of Italian MNEs location strategies: the empirical model is presented and justified and the results of the regression analysis are discussed. Section 4 briefly introduces the corporate profile of the Italian MNEs covered in the study, whilst section 5 analyses the evidence from the in-depth interviews with the executives. Section 6 concludes.

2.2 Italian Foreign Investments in EU New Member States and Neighbouring Countries

Italy is a key player in global investments towards the EU NMs and NCs. According to the International Monetary Fund (IMF) Italy's global outward investment has reached $535 billion in 2012 with $69.42 billion (approximately 13% of the total) going to the area of interest for this paper, suggesting that the region is extremely relevant to Italian foreign operations. Table 2.1 shows Italian investments in the countries of the area combining information from the Coordinated Direct Investment Survey of the International Monetary Fund[12] in the most recent available year with data on Italian new investment projects in the period 2003-2008 from the *FDi Markets* database created by Financial Times Business[13]. IMF macro-economic FDI data provide us with a complete

[12] http://cdis.imf.org/

[13] *FDi Markets* is the leading source of information on Foreign Direct Investments, providing data to the UNCTAD report and the World Bank. For each project detailed information is available on the investor (name and state/country of origin and sector of activity, including both manufacturing and services), on the destination area (country, state and city), and the main business function (including manufacturing, sales and marketing, R&D, logistic, headquarter and business services) involved in the investment abroad.

and updated picture of all Italian FDI flows in the area. However, IMF data are only available after 2009 and they do not include any detail on the nature of the investments. Conversely, *FDi Markets* data include detailed micro-level information on new foreign investment project undertaken in the region with sector and function breakdown based on the combination of a variety of local and media sources. The two data sources are highly correlated (65% correlation for the individual countries' shares of total investments; 93% correlation for the regional sub-totals reported in Table 2.1) confirming that *FDi Markets* micro-data – used here in the quantitative analysis – offer a reliable picture of investment patterns in the area, which has remained largely unchanged after the 2008 economic crisis as confirmed by the high correlation with IMF 2012 data.

Table 2.1 shows that the majority of Italian foreign operations in the region are concentrated in EU NMs (46.82% of total operations in the area according to the IMF; 45.39 in *FDi Markets*), followed by ACC countries (15.43% for the IMF; 18.52% in *FDi Markets*), ENP Southern (20.48% and 10.62% respectively) and ENP Eastern (2.09 for IMF and 6.37% for *FDi Markets*). Furthermore, a notable share of greenfield investment from Italy locates in Russia (15.18% in IMF and 19.11% in *FDi Markets*). The table suggests that *FDi Markets* is under-estimating the share of investments in the ENP Southern countries (ENP-S): indeed, the dataset looks at the number of new investment projects, and not at their financial value. The difference between the two measures suggests that Italian investments in the ENP-S (as will be confirmed by the interviews) tend to be relatively more capital intensive than in the eastern countries (ENP-E). Table 2.1 also highlights the importance of Russia as a destination: it is the single most attractive country in the area under analysis and, as such, it is an important benchmark for the assessment of alternative investment locations in the area. Other very relevant

locations for Italian foreign operations are Romania, Bulgaria and Poland in the EU NMs area, with shares equal to 11.2%, 9.65% and 7.92% respectively. Ukraine in the ENP-E area (4.25%) and Tunisia in the ENP-S (3.28%) represent the main regional destinations. With respect to the ACC countries, Italian operations appear more evenly distributed among regional actors, with an important role played not only by Turkey (4.4%) and Serbia (4.05%), but also by countries such as Albania (3.47%) and Croatia (3.28%).

[Table 2.1 here]

Table 2.2 shows Italian foreign investment in the area by business activity (only available from FDI markets). Following Nielsen (2008) in classifying activities in core and support business functions, it becomes apparent that 48.45% of Italian foreign operations in the area involve 'core business functions', while 51.53% can be defined as 'support activities'. Core functions are strongly dominated by investment in manufacturing activities (42.47% of total), suggesting that most Italian MNEs target the area for their 'production' activities. With respect to support functions, investments are dominated by 'marketing, sales and after sales servicing' (32.23%) and 'administrative and management functions (13.12%)'. Within the former category, investments are strongly concentrated in 'retail' activities (23.36%) and 'sales, marketing and support' (8.49%), whereas the 'business services' sub-category (12.93%) dominates the latter. The functional classification of the investments suggests that Italian MNEs are attracted in the area by two fundamental forces: low-cost production sites (manufacturing investments) and large and growing markets (sales-related investments).

[Table 2.2 here]

Table 2.3 reports Italian MNEs investment projects by broad sector of activity. The large majority of investment is concentrated in the industrial manufacturing sector (67.95%), while services represent a smaller share (26.45%). The majority of manufacturing investments is concentrated in medium-low technology sectors (47.3%, with textiles accounting for 26.64% of the total) but there is also a relevant share of operations carried out in high-medium technology sectors (20.66%). In the service industries, investment in high knowledge-intensive services (16.6%) is higher than low knowledge-intensive services (9.85%) and it is mostly dominated by financial services (13.71%). The sectoral analysis suggests that while business functions are polarised around two key activities, a broader variety of sectors are involved in the internationalisation process of Italian investors in the area.

[Table 2.3 here]

This preliminary descriptive evidence on the geography of Italian investments in the area reflects the more general trends highlighted in the existing literature. Technological change and the process of EU integration have favoured a process of structural re-organisation of Italian foreign investments in traditional sectors such as textiles and footwear, with the search for new investment targets and international value chain networks (Amighini and Rabellotti, 2006; Carabelli et al. 2009; Dunford, 2006). EU NMs and NCs have benefitted from this reorganization of production, receiving a relevant share of Italian 'production' and 'sales' investments. Italian 'production' investments have been pushed by the strong labour-intensive specialization of the Italian industrial base confronted with increasing domestic labour-costs and reduced profit margins in the absence of the competitive devaluations of the Italian Lira typical of the 1980s and early 1990s (Resmini, 2000). Conversely, 'sales' investments reflect the increasing

pressure for access to new (often less sophisticated) markets for Italian products and services. On a European scale, it has been suggested that ENP countries strongly benefit from EU foreign investment, which carry more advanced technological knowledge and managerial practices (Monastiriotis and Borrell, 2013). This geography of foreign investment is also reflected in the nature of the trade flows between the EU and NMs and NCs (Boschma and Capone, 2013; Petrakos et al., 2013; Pinna, 2013), with the latter specializing in less technologically advanced labour-intensive goods.

The quantitative analysis will explore these processes in a systematic way making it possible to identify the investments drivers after controlling for sectoral and functional factors.

2.3 Quantitative analysis

2.3.1 Empirical model and data

In line with existing empirical literature on the location choices of foreign firms (e.g. Schmidheiny and Brülhart, 2011), a Poisson regression model is adopted to investigate the relationship between a set of country-level attributes and the location decisions of 518 Italian greenfield investment in the region in the period 2003-2008[14]. The number of investments attracted by each country is modelled as a function of a number of national characteristics that can be referred back to two key investment motives discussed below – market-seeking and efficiency and resource-seeking motives – after controlling for general rule-of-law conditions and geographical and institutional proximity.

The following equation is estimated:

[14] 2003 is first year covered by the *FDi Markets* database. 2008 is the last year not affected by the economic crisis. Post-economic crisis data are still not available/sufficiently reliable in the *FDi Markets* database. The comparison with 2012 IMF investment data has confirmed that *FDi Markets* data offer a reliable picture of the geography of Italian investments in the area.

$$Ita\ invest_{it} = \alpha + \beta_1 market\ size_{it-1} + \beta_2 gov.consumption_{it} + \beta_3 distance_{iI} + \beta_4 exports_{it} + \beta_5 nat.resources_{it} + \beta_6 control\ of\ corruption_{it-1} + \beta_7 rule\ of\ law_{it-1} + \beta_8 education_{it} + \beta_9 average\ wage_{it} + \beta_{10} agglomeration_{it} + \beta_{11} Italian\ presence_{it} + \beta_{12} EU\ membership_{it} + \beta_{13} colony_i + \delta + \varepsilon_{it}$$

where the dependent variable *Ita investit* is the count of Italian investment in recipient country *i* in year *t*. The explanatory variables are explained in what follows.

Market-seeking

Market sizeit-1 is the log of National GDP at constant prices (US dollars 2005) in country *i* with a one-year lag, built on United Nations data. This is meant to capture the effect played by the internal demand on the choice of Italian MNEs to locate in recipient countries. There is wide acknowledgement in the empirical literature that this is a relevant pull factor for FDI and MNEs strategies (Wheeler and Mody, 1992; Chen and Moore, 2010).

Government consumptionit stands for general government final consumption expenditure as a share of GDP in country *i* and year *t*. This represents a proxy for the propensity of the government to incur in public spending and it might represent a relevant demand factor for MNEs, although a larger government role is frequently associated to inefficiencies and rent-seeking (Shleifer and Vishny, 1999). This measure is taken from World Development Indicators.

Agglomerationit represents the role of agglomeration economies in attracting foreign investment and it is measured by the share of urban population in country *i* and year *t*, as reported in World Development Indicators. There are good reasons to believe that more agglomerated areas are more attractive for foreign investors due to virtuous cycles of

externalities (Guimarães et al., 2000). However, considering the characteristics of Italian MNEs activities in the area, that are strongly skewed towards Medium-Low technology manufacturing, we might also expect that these operations are located far from cities to avoid congestion costs.

Efficiency- and resource-seeking

Average wage$_{it}$ is indirectly measured by means of log per capita GDP in county *i* and year *t*, calculated on data on GDP and population provided by the World Bank. Data on wages for most countries in the area are not available or not homogeneous. Existing empirical evidence on FDI in Central and Eastern European countries suggest that MNEs tend to locate in these areas for the large supply of cheap labour (Resmini, 2000). This hypothesis seems reasonable in the present context, also keeping in mind that investment of Italian MNEs is mostly concentrated in basic activities.

Education$_{it}$ is meant to capture the average education level in the host economy *i* in time *t*. This is the log of the ratio between secondary school age population and total population provided by UNESCO. Considering the wide and particular set of recipient countries under analysis, this is the only available measure for plausibly catching an education effect. The empirical evidence points out that FDI are attracted by locations endowed with higher human capital (Noorbakhsh et al., 2001; Crescenzi et al., 2013). Nevertheless, considering that Italian MNEs tend to invest in manufacturing and retail as well as Medium-Low technology manufacturing, as Tables 2.1, 2.2 and 2.3 show, we might also expect that they do not look for relevant human capital in the area.

Natural resources$_{it}$ indicates total rents from natural resources as a share of GDP in country *i* and year *t*. The literature has evidenced the existence of foreign operations from MNEs aimed at exploiting host

national natural resources (Asiedu, 2006). This is relevant to test here considering the set of countries under analysis, which includes large oil and natural gas producers. This measure is taken from World Development Indicators.

National Framework Conditions

Control of corruption$_{it-1}$ and *Rule of law*$_{it-1}$ are proxy variables for quality of the national institutional environment in host country *i* in year *t-1*, based on World Governance Indicators. These are aggregate indicators of different aspects of governance and countries' institutional context ranging from 2.5 to -2.5 with higher values associated with more effective control of corruption and rule of law, respectively. Existing empirical evidence on the role of institutional factors in determining FDI and MNEs location behaviour tend to suggest that foreign investors search for stable and reliable institutional settings to locate their operations (Altomonte, 2000; Phelps and Waley 2004; Rabbiosi and Santangelo 2014)

Degree of Integration/Institutional Proximity

Exports$_{it}$ stands for the value of exports of goods and services as a share of GDP in country *i* and year *t*. We expect a positive correlation of Italian MNEs location decisions and the importance of exports in host nations as a sign that MNEs interact with recipient countries also through trade: in fact, they might locate operations in recipient countries and re-export goods and services, suggesting an export-platform rationale of foreign investment (Ekholm et al., 2007). This measure is based on World Development Indicators.

Italian presence$_{it}$, is a stock variable generated on the basis of previous investment in the same destination country *i* by nationality (i.e. other Italian investment). This is to detect any pattern in the decisions of

Italian MNEs that my follow national lines. This measure is constructed with data from *FDi Market*.

EU membership$_{it}$ and *colony*$_{i}$ are dummy variables that capture specific characteristics of host countries in term of integration or political ties (Phelps, 1997). These are provided by CEPII. The former indicates whether country *i* is an EU member in year *t*, as membership to the Union provides countries with privileged economic and political links with Italy. The latter indicates whether country *i* had a past colonial relationship with Italy.

Geographical Proximity

Distance$_{iI}$ refers to the geographical distance between host country *i* and Italy *I*, as provided by CEPII. The literature has emphasized the importance of geographical distance in affecting trade and FDI via transaction, management and communication costs, arguing that most proximate locations are generally preferred (e.g. Silva and Tenreyro, 2004).

Finally, δ represents country-year dummies and ε_{it} is a random error term.

2.4 Results and discussion

Table 2.4 shows the results for the estimation of the Poisson regression model. The regression diagnostics confirm the robustness of the results and the goodness-of-fit of the model. Column 1 includes all investments drivers: proxies for market-seeking, efficiency and resource-seeking, national institutions, degree of integration and institutional and geographical proximity. In columns 2 and 3 additional controls for degree of integration/institutional proximity are included: the pre-existing stock of Italian investments and EU membership together with a control for the colonial past of the country.

Market-seeking factors exert a significant influence on the attraction of Italian foreign operations in the countries of the area: ceteris paribus countries with larger internal markets are more likely to be chosen by Italian investors. In addition, as will be supported by the interviews in the qualitative section, not only private demand exerts a crucial role for investments in the area but also public procurement remains central in a number of sectors and fields of activity: the intensity of government consumption is a positive and strongly significant predictor for the presence of foreign operations in a country of the area. The evidence on the role of both 'private' and 'public/government-led' demand is robust to the inclusion of additional controls for the degree of integration/ institutional proximity between the various countries and Italy (columns 2 and 3). What becomes negative and statistically significant after controlling for the pre-existing links between Italy and the destination country (as proxied by the pre-existing Italian presence) is the degree of concentration of the population in urban areas ('Agglomeration'). Countries with large densely populated metropolitan areas are – ceteris paribus – less attractive to MNE investments. This suggests that size of the national market is a very relevant 'attraction' force but its concentration in large urban areas might rapidly increase congestion costs (in a context of still un-developed basic infrastructure) discouraging foreign investments.

The high sensitivity of foreign investments to cost factors and efficiency motives is confirmed by the negative and strongly significant impact of average wage levels: high wages discourage investments. The negative impact of higher wages is not mitigated by higher average skill-levels. On the contrary, countries with a larger share of secondary educated people tend to attract – ceteris paribus – less foreign investments. The coefficient of the 'Education' proxy is always negative and becomes significant in column 2, after controlling for the stock of pre-existing investments. Once other Italian MNEs have invested in the

country – facilitating the upgrading of local suppliers and the provision of key standardised skills – the overall level of education of the population discourages new investments. This aspect will be further investigated with the case study analysis. Finally, the presence of natural resources exerts a positive and highly significant impact on foreign investments in all specifications of the model. Resource-seeking motives are still an important part of the story when considering foreign investments in the area.

When it comes to the general national 'framework conditions' for foreign investments in the area, 'control of corruption' and 'rule of law' - identified by the exiting literature and international organisations as the key obstacles for foreign investment take off in the region – are positive and significant predictors for new investments. Countries with more effective corruption control systems seem to be more attractive to Italian investments (positive and significant coefficient in column 1). However, once the stock of pre-existing Italian investments is accounted for, the more general 'rule of law' becomes a positive and significant attractor of investments, while the specific control of corruption turns out insignificant.

The final set of regressors control for the degree of economic integration and institutional proximity between sending and receiving country. Pre-existing trade flows positively influence subsequent greenfield investments (column 1) but the direct presence of previous Italian investments is far more important, making the trade coefficient almost non-significant. The results highlight a significant path-dependent aspect in Italian MNEs location behaviour (that will be confirmed by the case studies), with new investment replicating past location choices in order to benefit from existing formal and informal local networks and suppliers linkages. As far as the role of EU membership is concerned, the regression analysis does not detect any effect on investments. It is very likely that the most of this effect has been

anticipated in the 1990s and early 2000s, as the literature has highlighted (e.g. Resmini, 2000).

[Table 2.4 here]

2.5 Qualitative analysis

The overall picture of the drivers of Italian investments in the area and their location strategies developed with the quantitative analysis needs to be complemented with more in-depth qualitative analysis of specific case studies of Italian Multinationals with multiple investments in the EU-15 (the core of the EU) and in the countries of the area under analysis. Two major Italian MNEs fulfilling these criteria have been selected for the case studies: Finmeccanica and Saipem. A short presentation of these companies and their activities in the area will be followed by the analysis of the interviews[15] with key executives in both firms. A copy of the guidelines/questionnaire used for the semi-structured interviews with the executives is included in Appendix B.

2.5.1 MNEs profiles

Finmeccanica

Finmeccanica is a major Italian corporate group active in seven high-technology sectors including Helicopters, Defence and Security Electronics, Aeronautics, Space, Defence Systems, Energy and Transportation. As a holding company, Finmeccanica owns 9 enterprises[16] operating in these sectors and it also participates into 8

[15] Interviews with executives were conducted at the company Head Quarters on April 2, 2013 and May 31, 2013 (Finmeccanica, Rome); June 3, 2013 (Finmeccanica, London); 8 April, 2013 (Saipem, Milan).
[16] AgustaWestland, DRS Technologies, Selex ES, Alenia Aermacchi, Oto Melara, WASS, Ansaldo Breda, Ansaldo STS, BredaMenarinibus.

joint ventures[17] through its controlled companies. According to the 2013 Finmeccanica Group Profile, it is Italy's leading industrial company in high-technology activities and ranks amongst the top ten global players in Aerospace, Defence and Security. As emerged in the interviews to executives, 30.2% of Finmeccanica is owned by the Italian Treasury, which is the largest shareholder of the group. This implies a strong connection between corporate strategies and the international relations between Italy and third countries. This is a very relevant feature of this corporate group, which operates in highly sensitive sectors for Italian strategic interests.

The international presence of Finmeccanica has strongly increased in recent years: it employs about 67,000 people in 230 industrial and technical sites and in 322 commercial and marketing offices in over 50 countries. In terms of sales, Finmeccanica sells its products in nearly 150 nations. From an organizational point of view, it is headquartered in Italy and has a relevant industrial and commercial presence particularly in four markets: Italy, UK, USA and Poland. As far as its economic performance is concerned, revenues in 2012 have reached 17.2 billion Euros, of which 32% is attributed to Defence and Security Electronics, 24% to Helicopters and 17% to Aeronautics.

As highlighted in the interviews with executives, Finmeccanica is a large and very complex corporate group, in terms of typology of sectors and customers, since it has strong ties to both civil and military actors. This implies highly diversified commercial strategies and approaches across geography according to the political, institutional and business profiles of the recipient countries.

Saipem

Saipem is a large multinational company and one of the main world-

[17] NHIndustries, ATR, Eurofighter GmbH, SuperJet International, Telespazio, Thales Alenia Space, MBDA, Ansaldo Energia.

wide contractors in the oil & gas industry. It operates mainly in energy-related activities in remote areas and deep-water, and it is considered a world leader in the provision of engineering, procurement, project management and construction services. Saipem's core business is design and execution of large-scale offshore and onshore projects with relevant technological competencies in terms of gas monetization and heavy oil exploitation[18].

In terms of ownership structure, Saipem is part of the ENI (Ente Nazionale Idrocarduri) group that currently owns approximately 43% of Saipem. From an organisational standpoint Saipem is organized in two Business Units: Engineering & Construction and Drilling.

As emphasized during the interview with executives, Saipem is a global contractor with strong local presence in several European countries (with key strategic subsidiaries in France, UK, and in new member states such as Croatia and Romania), but also in emerging areas such as West Africa, North Africa, Central Asia, Middle East, and South East Asia. More recently the company has pursued the vigorous development of production sites in Saudi Arabia and Indonesia, as well as engineering and project management centres in Algeria, Azerbaijan, the United Arab Emirates (UAE) and Canada.

A relevant feature of Saipem is that it operates through a highly decentralized organizational structure in order to take advantage of local strengths and respond to location-specific needs and sustainability issues. The company invests substantially in local facilities, ranging from engineering centres and support yards (for maintenance and storage of construction equipment) to fully-fledged fabrication yards, where sections of major projects are assembled for onshore field construction or offshore

[18] 'Gas monetisation' is the development of different typologies of gas from 'natural resources' into 'final products' ready for the international markets. This process implies the transformation of the product so as to match specific modes of transport (e.g. liquid gas transported via dedicated pipelines). Similar challenges apply to 'heavy oil exploitation': heavy crude oil requires prior transformation in order to flow to production wells. These operations and processes require high technological competences.

installation. It also contributes to local employment as a way to enriching the diversity of Saipem workforce and to recruiting young talents from around the world.

2.5.2 Analysis of the interviews with executives

The interviews with key executives in both Finmeccanica and Saipem suggest that market-seeking and resource-seeking investment dominates the strategies of these two Italian MNEs in the area of interest. These companies, although being substantially different in terms of sector of activity, internal organisation and objectives, offer interesting and illustrative examples of location strategies and modalities of crucially important MNEs from the same country of origin in the EU-15 towards EU NMS and NCs.

Mode of Entry

While the quantitative analysis can only look at greenfield investments (for which systematic data are available) the interviews made it possible to shed some light on alternative modes of entry of MNEs into the local markets. Executives in Finmeccanica highlighted in their interviews that trade connections act as an initial link, but partnerships with local firms are crucially important to enter new markets. Alliances, joint ventures, partnerships and M&As are all components of a diversified strategy to establish a presence in the local markets with new subsidiaries as the very final step (e.g. in the case of Poland by means of a key acquisition). Very similar approaches were highlighted by executives in Saipem. Subsidiaries are used in more sophisticated relational-intensive contexts in the EU-15 (UK and France), and where wider markets are expected to be served by means of stable regional hubs in the NMs (Croatia and Romania). Conversely, in ENP-S and ENP-E countries partnerships and joint-ventures with local firms are

considered the key modes of entry into the local economies (e.g Azerbaijan or Egypt). The establishment of local offices normally follows the formation of partnerships in key countries (e.g. Libya with approximately 100 employees, or Algeria with more than 500) as part of a gradual expansion strategy in the foreign market.

Market-seeking operations

Regression results suggest that the presence of Italian MNEs in EU NMs and NCs is higly influenced by the size of national markets. Moreover, the analysis provides indication that government consumption is also important as a pull factor for Italian investment. Interviews with Finmeccanica's executives reveal that a large share of its operations in the countries under analysis responds to market-seeking motives. However, the interviews offer a more nuanced picture of this type of investment driver.

When looking at investments in NMs, Finmeccanica interviewees stressed the importance of the acquisition of the Polish firm PZL-Świdnik in 2010 via its fully-owned sister company AgustaWestland. This acquisition followed a 20-year long Finmeccanica presence in Poland through several of its fully-owned companies. Therefore, Finmeccanica had developed connections and direct experience of the Polish market during two decades before entering the national market with a direct acquisition. Before the latter, PZL-Świdnik was already a supplier of AgustaWestland for several components of helicopters (e.g. fuselage) and, at the time of the acquisition, around 60% of the activity in PZL-Świdnik was connected to Finmeccanica. However, according to the interviewees, the objective of the acquisition was not the in-sourcing of part of the production chain, but rather a step in a wider strategy aimed at gaining a strong and more stable presence not only in the Polish market but also in other Central and Eastern European countries (CEECs) leveraging Poland as a regional hub. In fact, as far as the Defence sector is

concerned, Poland has made substantial investments in the last years and it represents the main market in the CEECs area. According to figures of the European Defence Agency, the Defence expenditure of Poland has increased by 41.3% between 2005 and 2011, reaching €6,557 million in 2011, and it is followed by that of Czech Republic which stands at only €1,843 million. Also in relative terms, the Defence expenditure of Poland in 2011 had the largest weight on national GDP among CEECs, amounting at 1.77%. As compared to the Defence expenditure of the EU-15 countries, Poland ranks immediately after the main 'old' members: the UK, Germany, France, Italy, Spain and the Netherlands. Therefore, there are strong indications that the presence of Finmeccanica in Poland is connected to market-seeking strategies in response to both private and government-related demand. In this respect, the preferred mode of entry has entailed the acquisition of a pre-existing domestic firm, in line with the strategies of most MNEs aiming at accessing CEECs markets since the later 1990s (Uhlenbruck, 2004).

With respect to NCs, Finmeccanica has a remarkable interest for local markets in Turkey, Russia and several Northern African countries, such as Libya, Egypt and Algeria. Expansion in all these countries needs a constant institutional support of both the Italian and the host governments, given the strategic national defence importance of some of Finmeccanica's products. However, within the complex set of institutional and political relationships, the selection of the target countries for Finmeccanica investment is largely driven by market size considerations and in particular by the importance in the Defence market. This is especially the case for Finmeccanica-owned firms in Turkey and Russia, all with a strong commercial orientation towards the local market.

Market-seeking motives have a very different nature for Saipem given the specific nature of its goods and services (i.e. engineering, procurement, project management and construction services). For

Saipem – as discussed below – location strategies are closely linked to the location of natural resources that attract its products and services to particular locations. However, this demand is often anticipated and matched by means of appropriately tailored products thanks to constant interactions established with the key potential customers. These complex network of contacts and linkages takes place through the subsidiaries located in London and (to a lesser extent) in the regional hubs in NMs in Croatia and Romania. Large representative offices in Algeria (ENP-S) and Azerbaijan (ENP-E) pursue similar – although more peripheral and lower-level – functions of 'anticipation and matching of potential demand'.

Efficiency and Resource-seeking operations

From the interviews with Finmeccanica executives it clearly emerged that the key driver for the selection of Poland as a key hub in the NMs was the abundant supply of high quality engineers. Given the significantly lower average wages in Poland vis á vis the other major locations of Finmeccanica (Italy, UK and USA), the conjugation of market (discussed above) and efficiency-seeking motives is immediately apparent. Conversely, the technology and competence gap with the NCs seems to make it impossible to leverage local human capital in any significant form. Access to natural resources does not seem to play a particular role for Finmeccanica given the global and versatile nature of its value chain.

Conversely, Saipem interviewees suggested that the main rationale for the location behaviour of their company is linked to the presence of oil and gas resources and their markets. The time horizon of Saipem operations in a certain country tends to be more long-term the more important the location is in terms of energy markets. In the set of countries under analysis, Saipem has different strategies for different locations according to their relative importance in terms of resource endowments. Therefore, Saipem mostly operates in places such as the

Russian Federation, Algeria, Libya, Egypt, and Azerbaijan as well as other locations including Morocco and Tunisia. Hence, as interviewees pointed out, the main motivation behind the location strategies of Saipem is not attached to traditional considerations such as efficiency- or purely market-oriented investment, but it is entirely dependent on the presence of natural resources. Once operations in a location are established, Saipem aims at a long-lasting presence, given that natural resources are immobile. Therefore, labour cost, fiscal incentives, local demand or other determinant factors for operations in other sectors tend not to be the primary concern of the location strategy of Saipem in the area investigated, although they might have a complementary impact. Indeed, over 75% of total employment in Saipem around the world is represented by personnel from developing countries where natural resources are located, suggesting that efficiency-seeking motivations remain important for the Italian MNE.

National Framework Conditions, Degree of Integration/Institutional and Geographical Proximity

In line with official policy documents by the European Commission (2013) and with the results of the quantitative analysis, interviewees at both Finmeccanica and Saipem agree on the importance of rule of law and stable and reliable institutions for their operations in the countries of the region. Highly convergent are also the views of executives in both MNEs on the very limited influence of geographical proximity for their location strategies. Both companies highlighted the 'global' search for investments opportunities that is rarely constrained by spatial distance considerations, although one of the Saipem interviewees highlighted geographical proximity as an additional factor justifying the selection of Croatia for one of their subsidiaries.

What remains remarkably distinctive in the strategies of both MNEs is their approach to the 'development' of institutional proximity with their target countries.

A noticeable example of the complex interaction between market-seeking motives and institutional factors (i.e. the importance of bilateral inter-governmental relations and agreements) comes from the case of Finmeccanica in Egypt, where some of the companies owned by Finmeccanica have experienced a rapid growth in the last few years. Egypt is a strategic country in the region of Middle East and North Africa (MENA), with strong political ties with the US. As mentioned in the profile section, Finmeccanica is also a US 'domestic' group by virtue of its acquisition of the US-based DRS Technologies in 2008. Furthermore, a number of other controlled or owned companies have strong interests in the US market. Therefore, Finmeccanica could benefit synergistically from the strong role played by the US in Egypt and, at the same time, from the bilateral agreements between Italy and Egypt to operate in this country.

Saipem has instead adopted a completely different strategy to develop relationships and integration with its host countries, centred on the importance of local actors in its activities. Saipem interviewees revealed that the success of the presence of Saipem in a country is directly connected to the intensity of interactions with local social and institutional actors, highlighting the importance of these resources for the final product. This strategy is based on a trust-building process with local agents through partnerships, sub-contracting practices and training of local workforce, leading to the development of a local network of collaborations that supports corporate activities and objectives. Successful operations require a certain degree of embeddedness in local contexts to gain some competitive advantage and secure a long-term presence in a relevant location.

This clearly recalls what has been recently suggested by scholars in terms of network relationships between MNEs and agents within the local context (e.g. Crescenzi et al. 2013; McCann and Mudambi, 2005; Meyer et al. 2011; Iammarino and McCann, 2013), where MNEs embed their practices in local contexts through their foreign affiliates according to both corporate objectives and social, economic and institutional features existing in the specific local environments. Furthermore, training and employing local workers allows foreign affiliates to generate and take advantage of new local competitive advantage (Cantwell, 2009; Phelps and Waley 2004) as well as incorporating local profiles and competences in MNEs activities and objectives. Following this line of argument and balancing it with efficiency-seeking considerations, Saipem's strategy is to maximize the employment of local personnel. Indeed, over 75% of total employment in Saipem around the world is represented by personnel from developing countries where natural resources are located. The maximization of what the company defines as "local content" of the activities carried out in foreign markets is one of the main features of Saipem's business philosophy. The "local content" strategy is aimed at providing considerable social benefits to the host country, in terms of investments, employment, development of subcontractors and other factors.

Table 2.5 summarizes the key evidence emerging from the case studies analysis presenting the material in a comparable fashion with the quantitative regression analysis.

[Table 2.5 here]

2.6 Conclusions

This paper analysed the location strategies of Italian Multinationals in EU NMs and NCs by means of a mixed-methods approach that allowed us to gain a comprehensive picture of both host location and firm-level characteristics, which jointly determine MNE choices and strategies. The regression analysis assessed the relative importance of alternative country-level features as drivers of location choices, whilst the in-depth case studies focused on two of the largest Italian MNEs – Finmeccanica and Saipem – providing relevant insights and complementing the econometric investigation.

The quantitative and qualitative analyses offer a clear and convergent picture of the Italian MNE behaviour in the area. However, the case studies highlighted also significant sectoral and functional differences across the two firms that would have otherwise remained 'hidden' in the idiosyncratic components of the regression.

The overall results show that market-seeking strategies are still predominant in driving foreign investments in the EU NMs and NCs. Both private and government-related demand exerts a very relevant influence. However, the predominantly low-medium tech production investments that dominate capital flows between Italy and the area tend to be discouraged by congestion costs: increasing urbanisation has a negative impact on investments. The high sensitivity of MNEs to cost factors (efficiency-seeking) is confirmed by the strong attractive power of low wages and natural resources; the quality of the general business environment and the rule of law are, as expected, key facilitating factors for foreign operations.

If some 'common' factors can be generalised from both the quantitative and the qualitative analyses, the ways in which MNEs enter the local markets and develop new institutional and functional proximity with the local economy tend to remain highly diversified. Multinationals' strategies are influenced by their sector of activity, organisational structure, strategic management of the value chains and business

culture. In the case of Finmeccanica inter-governmental networks and bilateral international agreements are leveraged to enter local markets and develop the necessary integration with the target economies. As far as Saipem is concerned, institutional assimilation with local markets is developed by means of special arrangements such as local training initiatives and employment of local workforce ('local content'), and place-specific sustainable activities.

In this context the European Neighbourhood Policy (ENP), by strengthening the links between the EU and its neighbourhood in institutional, political, social and economic terms, can possibly facilitate the development of the 'framework conditions' needed for EU MNEs investments in the area. More direct interaction with the European Union can also facilitate institutional reforms and the pro-investment change in the individual countries of the area. However, the results presented in this paper suggest that substantial technological upgrading is still necessary in order to attract more sophisticated functions and reduce the current emphasis on purely market seeking investments. In this context, policies supporting human capital and training (and re-training) of the local labour force might play a very relevant role.

A note of caution in interpreting these results is needed, as the different methodologies here implemented can offer only a partial view of the complexity of MNE strategies. In fact, while the quantitative analysis provides a picture of the location attributes that drive MNE choices and the qualitative analysis offers a focus on MNE diversity, generalising these findings to other contexts can be a misleading exercise. More research is certainly needed to explore the interaction between location advantages and MNE heterogeneity in determining FDI decisions for other samples of countries or regions within countries.

Table 2.1: Italian new foreign operations in the EU NMs and NCs

Country	Number of New Investment Projects (2003-2008)*	%	Outward Direct Investment Positions (USD, Millions) 2012**	%
EU New Member States (NMs)				
Bulgaria	50	9.65	1015.19	1.46
Czech Republic	15	2.9	1986.65	2.86
Estonia	2	0.39	63.69	0.09
Hungary	29	5.6	2683.77	3.87
Latvia	9	1.74	31.22	0.04
Lithuania	2	0.39	0.08	0.00
Malta	1	0.19	693.60	1.00
Poland	41	7.92	15757.23	22.70
Romania	58	11.2	4749.54	6.84
Slovakia	22	4.25	3887.00	5.60
Slovenia	6	1.16	1634.90	2.36
Subtotal	235	45.39	32502.85	46.82
EU Accession and Candidate Countries (ACC)				
Albania	18	3.47	1491.64	2.15
Bosnia and H.	11	2.12	231.80	0.33
Croatia	17	3.28	1063.57	1.53
Macedonia	2	0.39	175.83	0.25
Montenegro	4	0.77	239.12	0.34
Serbia	21	4.05	1074.12	1.55
Turkey	23	4.44	6435.62	9.27
Subtotal	96	18.52	10711.70	15.43
ENP Southern Countries (ENP-S)				
Algeria	6	1.16	5889.20	8.48
Egypt	10	1.93	5723.42	8.24
Israel	3	0.58	447.40	0.64
Lebanon	5	0.97	56.11	0.08
Libya	5	0.97	278.38	0.40
Morocco	8	1.54	403.55	0.58
Syria	1	0.19	421.96	0.61
Tunisia	17	3.28	997.21	1.44
Subtotal	55	10.62	14217.22	20.48
ENP Eastern Countries (ENP-E)				
Armenia	1	0.19	186.77	0.27
Azerbaijan	4	0.77	175.60	0.25
Belarus	1	0.19	48.81	0.07
Georgia	2	0.39	39.20	0.06
Moldova	3	0.58	122.57	0.18
Ukraine	22	4.25	879.26	1.27
Subtotal	33	6.37	1452.21	2.09
Russia	99	19.11	10536.55	15.18
Total	518	100	69420.53	100.00

* Source: *FDi Markets* data; **Source: IMF data

Table 2.2: Italian new foreign operations in the EU NMs and NCs by business activity

Business Activity	*n*	*%*
CORE BUSINESS FUNCTIONS	**251**	**48.45**
Construction	27	5.21
Manufacturing	220	42.47
Other	4	0.77
SUPPORT BUSINESS FUNCTIONS	**267**	**51.54**
Distribution and Logistics	28	5.41
Marketing, sales and after sales servicing	167	32.23
Retail	121	23.36
Sales, Marketing & Support	44	8.49
Other	2	0.38
ICT Services	0	0
Administrative and management functions	68	13.12
Business Services	67	12.93
Other	1	0.19
Engineering and related technical services	2	0.39
R&D	2	0.39
Total	518	100

Table 2.3: Italian new foreign operations in the EU NMS and NCs by sector

Sector	*n*	*%*
MANUFACTURING	**352**	**67.95**
High-Medium Technology	**107**	**20.66**
Automotive Components	12	2.32
Automotive OEM	20	3.86
Consumer Electronics	17	3.28
Industrial Machinery, Equipment & Tools	20	3.86
Other	38	7.34
Medium-Low Technology	**245**	**47.3**
Building & Construction Materials	16	3.09
Consumer Products	16	3.09
Food & Tobacco	18	3.47
Textiles	138	26.64
Other	57	11.00
SERVICES	**137**	**26.45**
High Knowledge-Intensive	**86**	**16.6**
Financial Services	71	13.71
Other	15	2.9
Low Knowledge-Intensive	**51**	**9.85**
Hotels & Tourism	14	2.7
Real Estate	16	3.09
Transportation	15	2.9
Other	6	1.16
PRIMARY	29	5.6
Total	518	100

Table 2.4: Poisson regression results

Dep.Var.: Investment count	1	2	3
Market-Seeking			
Internal market size $_{t-1}$	2.776***	1.873***	1.703***
	0.511	0.561	0.612
Government consumption	0.080***	0.086***	0.089***
	0.011	0.01	0.01
Agglomeration	-0.054	-0.111**	-0.100**
	0.04	0.0432	0.044
Efficiency- and Resource-Seeking			
Average wage	-1.651**	-3.411***	-3.241***
	0.656	0.596	0.63
Education	-0.447	-1.029**	-1.019**
	0.502	0.504	0.493
Natural resources rents	0.037***	0.017***	0.016***
	0.004	0.003	0.003
National Framework Conditions			
Control of corruption $_{t-1}$	0.519***	0.149	0.14
	0.148	0.154	0.148
Rule of law $_{t-1}$	0.024	0.814***	0.833***
	0.194	0.164	0.164
Degree of Integration/Institutional Proximity			
Exports	0.009**	0.008*	0.008*
	0.004	0.004	0.004
Italian presence		0.450***	0.458***
		0.0534	0.054
EU membership			-0.044
			0.055
Ex-Colony			2.427
			2.392
Geographical Proximity			
Distance	0.007***	-0.005*	-0.005*
	0.002	0.003	0.003
Constant	-63.0***	-6.3	-3.6
	10.43	14.13	14.95
Observations	518	518	518
National dummies	Yes	Yes	Yes
log likelihood	-3286	-3068	-3065
pseudo R-squared	0.908	0.914	0.915

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 2.5: Summary Table of Case Studies

	SAIPEM		FINMECCANICA	
	NMs	*ENP*	*NMs*	*ENP*
Entry mode	Subsidiary (Croatia, Romania)	Partnerships and representative offices (e.g. Algeria, Azerbaijan)	Acquisition (Poland)	Joint-Ventures /Partnerships
Market-Seeking	Hubs for wider regions	0	Government Demand / Hubs for wider regions	+
Efficiency- and Resource-Seeking	0	+ for Natural Resources	+ for Human Capital	0
National Framework Conditions	+	+	+	+
Degree of Integration/Institutional Proximity	EU	Local embeddedness and 'local content'	EU	Bilateral inter-governmental agreements
Geographical Proximity	Relevant for the choice of Croatia	0	0	0

Source: based on interviews with executives
Legend: + Relevant; 0 neutral/not relevant

Appendix B

GUIDELINES/QUESTIONNAIRE FOR IN-DEPTH INTERVIEWS TO MULTINATIONAL ENTERPRISES

SECTION 1: GENERAL INFORMATION ON *CORPORATE GROUP*

1.Key facts about your Enterprise (e.g. general info, presentation, industrial sector, core strategy / aim, main facts and figures, etc.)

2.Enterprise structure (e.g. geographical distribution of functions/activities)

3.Where does your Enterprise have operations in the European Neighbouring Policy (ENP) area?

Northern Africa / Middle East

□ Morocco
□ Algeria
□ Tunisia
□ Libya
□ Egypt
□ Syria
□ Lebanon
□ Jordan
□ Palestine
□ Israel

East and Caucasus

□ Ukraine
□ Belarus
□ Moldova
□ Georgia
□ Armenia
□ Azerbaijan

SECTION 2: LOCATION

(When answering this question please refer to ENP countries as indicated in question 3b)

4. What are the main considerations behind the selection of a location for investment within the ENPs? (e.g. natural resources, new markets, costs/efficiency, strategic assets/competences, etc.)

5. What are the functions or activities that your Enterprise locates in the ENPs? (Headquarter, R&D, marketing/sales, production, logistic & distribution, etc.)

6. Your presence in the UK and in the ENP area is part of a larger strategy? How? (e.g. creation of a corporate global network, penetration vs. consolidation, relations with competitors, relations with partners, customers/suppliers, etc.)

7. What are the entry modes of your Enterprise in the ENPs? (e.g. joint venture, M&A, sub-contracting, other business agreements, etc.)

SECTION 3: LOCAL LINKAGES

8. What are the localised social and economics actors your Enterprise establishes relationships with in the ENPs? (e.g. local firms, other foreign subsidiaries, universities/research centres, trade unions, industry associations, other organisations, etc.)

9. What is the aim of establishing relationships with local actors in the ENPs? (e.g. suppliers/customers, competitors, technological collaborations/training/joint research projects, institutional support/bureaucracy, etc.)

10. To what extent relationships with local actors are formalised in the ENPs? (e.g. formal vs. informal, trust-based/control, permanent vs. temporarily relationships, etc.)

11. Does co-location (in the same subnational region/locality) play a role in determining what local actors are selected for establishing relationships with in the UK? And in the ENPs?

12. To what extent relationships with local actors in the ENPs contribute to the innovation activities of your Enterprise? (e.g. what kind of knowledge is transmitted through such relationships? Product/process innovation, solutions to technical problems, project support, basic vs. advanced knowledge, etc.)

SECTION 4: LOCAL CONTEXT

13. What are the strengths and weaknesses of the ENPs in the long-term strategy of your Enterprise? Please indicate the importance of the following points from 1 (very weak) to 5 (very strong):

□ Labour cost;
□ Quality of human capital;
□ Competition;
□ Political framework;
□ Regulation/bureaucracy;
□ Institutional quality;
□ Technological/scientific base;
□ Business culture
□ Other (please specify)

14. How does your Enterprise reacts to the above mentioned weaknesses in the ENP
context? (e.g. training, lobby, etc.)

Chapter 3 – Economic Institutions and the Location Strategies of European Multinationals in their Geographical Neighbourhood

3.1 Introduction

Over the past two decades the European Union (EU) has strongly intensified economic and political relationships with its geographically neighbouring countries. Two rounds of enlargement in 2004 and 2007 brought several ex-socialist economies under the aegis of the EU, Croatia joined in 2013, and more countries are currently candidate to membership. In addition, the European Neighbourhood Policy (ENP) was launched in 2004, with the aim of creating a ring of countries across the Mediterranean and the East of Europe with which the EU could intensify economic linkages as well as develop peaceful and cooperative relationships (COM, 2004; Wesselink and Boschma, 2012). The complex set of connections that the EU has established with a wide range of actors in the area has gradually enhanced the economic and institutional integration between the EU itself and its counterparts. While full economic integration was attained with the New Member States (NMS), the interactions with candidate countries and ENP countries are still growing.

In this scenario, Multinational Enterprises (MNEs) from the Old EU-15 members have had wide and increasing opportunities to expand their operations within the continent and beyond its immediate borders. The aim of this paper is to study the location of investments undertaken by EU-15 MNEs towards a wide set of locations integrated or linked to

different extents the Union: NMS, Accession and Candidate Countries as well as ENP countries and the Russian Federation.[19] This is a highly heterogeneous group of EU members, transition and developing countries, the latter two groups having in common their geographical proximity to the EU. This entails a set of privileged relationships with the Union, ranging from full membership in the case of NMS, accession treaties, action plans within the ENP framework, and bilateral agreements in the case of Russia.

In particular the paper aims to analyse the role of economic institutions in shaping MNE greenfield investment location decisions once new opportunities and geographical options are made available by tighter economic integration or more favourable preconditions for foreign investments as a result of formal agreements. By exploiting the unique conditions offered by the selected group of countries with varying degrees of economic integration with the EU and highly heterogeneous institutional conditions, the paper focuses on three key dimensions of the recipient economies: (i) regulatory characteristics connected to both national labour markets and business conditions; (ii) legal aspects relevant in market transactions, i.e. property rights protection and degree of contract enforcement; (iii) weight of government intervention in the host countries' economies.

The contribution of the paper is threefold. First, it innovatively combines the literature on institutional conditions with the analysis of MNEs location strategies by focusing, differently from other existing works, on economic institutions and their different dimensions. In fact, although the institutional environment of recipient countries has been the object of analysis of a number of studies, the great majority of this

[19] The countries here considered are 21, namely: (a) NMS: Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia; (b) Accession and candidate countries: Albania, Croatia (which joined the EU in July 2013) and Turkey; (c) ENP: Ukraine; Algeria, Egypt, Israel, Jordan, Morocco and Tunisia; (d) Russian Federation.

literature focuses on political, rather than economic, features of the national institutional setting (e.g. Campos and Kinoshita, 2003). Second, the paper acknowledges right from the start the high heterogeneity of MNE behaviour with reference to economic institutions, therefore making use in the empirical strategy of a random-coefficient Mixed Logit (MXL) model (still rarely employed in this field of research)[20] in order to fully capture this heterogeneity and its drivers.[21] The investigation of the diversity of MNE preferences is still an underdeveloped area of enquiry, especially as far as quantitative analyses are concerned, while qualitative approaches have already started to explore such a dimension (e.g. Phelps and Wu, 2009). Hence, this work contributes to the ongoing scholarly debate by empirically testing the nature and magnitude of MNE preferences with respect to recipient countries' institutions. In so doing, the paper also explores how heterogeneous preferences in MNE localisation strategies vary across different sectors of economic activity and business functions. Third, notwithstanding the increasing geo-political and economic importance of the EU 'neighbourhood', there is very limited empirical evidence on the (evolving) position in global investment networks of this set of countries. Filling this gap is crucially important for the design of appropriate development policies by the European Union, as well as for national governments and a number of international organisations active in the area (e.g. United Nation Development Programme and the World Bank among others).

The analysis is based on the combination of data on 6,888 greenfield investment projects undertaken between 2003 and 2008 by MNEs from EU-15 countries into a set of 21 destination countries, and Fraser Institute data on their economic institutional conditions. The paper firstly applies a standard Conditional Logit model in order to maximise

[20] See Defever (2006; 2012) and Cheng (2008) for previous modelling of MNEs location choices with random-coefficient Mixed Logit.
[21] This methodology allows to model variation of preferences over location attributes in MNEs strategies.

comparability with existing studies and, in a subsequent step, explores MNEs' behavioural heterogeneity by means of random-coefficient Mixed Logit. Although we should refrain from any causal interpretation of the results, the empirical analysis suggests that economic institutions play a highly significant role in shaping greenfield investment decisions after controlling for other economic characteristics of the host economies, showing significant heterogeneity in MNEs' preferences over different institutional settings both by sector and by function of the MNE.

The paper is structured as follows: Section 2 provides an overview of the relevant literature on MNE location behaviour and on the role of economic institutions in attracting foreign investors, identifying the main research questions and hypotheses to be tested. Section 3 describes data and a variable used in the analysis, and provides some descriptive evidence about the location of European foreign investment in the group of countries of interest and their institutional conditions. The methodology is discussed in Section 4, while Section 5 presents the empirical results. Finally, some concluding remarks and tentative policy implications are drawn in Section 6.

3.2 MNEs location strategies, host economy advantages and institutional conditions

3.2.1 MNEs and host economy advantages

The analytical framework for the analysis of MNE location decisions is Dunning (1977, 1988)'s Ownership-Location-Internalisation (OLI) eclectic paradigm. The OLI framework implies that the existence of ownership-specific advantages (O) possessed by some firms may lead to the decision to internalise (I) activities and to undertake operations in sites endowed with location-specific advantages (L). Consequently, the combination of

(O), (L) and (I) advantages justifies MNEs' existence and their ability to maximize their productive efficiency while minimising the impact of uncertain and imperfect markets on their operations.

However, whilst the interactions between ownership and internalisation advantages have been extensively investigated (see for example the seminal work by Buckley and Casson, 1976; Teece, 1977; Rugman, 1981; Hennart, 1982), the study of location advantages has suffered from a number of conceptual and empirical constraints, among which the problematic conceptualisation of space and the severe restriction in data availability (McCann and Mudambi, 2005; Iammarino and McCann, 2013).

In the traditional empirical economics literature attention has been directed to factor endowments in a broad sense, including, among other location drivers, physical infrastructure (e.g. Coughlin et al., 1991), tax differentials (e.g. Devereux and Griffith, 1998), policy instruments (Basile et al., 2008), and labour costs (e.g. Liu et al., 2010). Urban and regional economics contributions have focused on agglomeration economies, spatially bounded externalities and the geographical concentration of economic activity as drivers of MNEs' location behaviour (e.g. Head et al. 1995; 1999; Guimarães et al., 2000; Crozet et al., 2004; Disdier and Mayer, 2004; Devereux et al., 2007; Mayer et al. 2010; Hilber and Voicu, 2010; Spies, 2010). Furthermore, empirical studies within the New Economic Geography have shown that not only MNEs tend to replicate the location decisions of previous firms with similar attributes, but agglomeration effects also act through demand linkages (Head and Mayer, 2004) as well as specialised inputs supply (LaFountain, 2005).

The Economic Geography literature has more recently focussed on the fragmentation of international activities of MNEs along functional lines. This stream of research has highlighted that MNE location

behaviour and the fragmentation of production processes into different functions respond to spatial concentration mechanisms (Defever, 2006 & 2012; Strauss-Kahn and Vives, 2009). The concept of Global Value Chains has been more recently added to this debate with the analysis of the linkages between MNEs location behaviour along value chains and the innovative and socio-economic environment of host locations (Crescenzi et al., 2014). These analyses suggest that MNE location of different business functions/Global Value Chain stages may follow different corporate strategies according to the characteristics of the investor, the location and the specific operation offshored. Besides, the location choice is influenced by the phase of firms' life cycle, leading to a co-evolution of location decisions and accumulation of firms' capabilities (Stam, 2007). Entry modes of MNEs into foreign markets are also shaped by spatial heterogeneity through the interaction between the strength of local externalities and firms' competencies (Mariotti et al., 2014).

Technological regimes and systems of innovation conditions have been extensively analysed in the literature at the intersection between Economic Geography and International Business (Beugelsdijk and Mudambi, 2013). The international spatial allocation of MNE activities tends to be marked by the existence of 'core and periphery' patterns according to the complexity of activities (McCann and Mudambi, 2005), leading to differences in territorial trajectories and growth dynamics and to cumulative causation mechanisms (e.g. Cantwell and Iammarino, 1998 & 2001). Since technological development tends to be cumulative in nature and characterised by elements that are bounded in specific places, it is suggested that MNEs establish networks for innovation across locations by tapping into regional profiles of specialisation and strengthening local technological competencies, thus feeding a regional hierarchy of centres across and within national boundaries (Cantwell and Iammarino, 2003). The interactions between regional knowledge bases

and MNEs technological strategies are investigated in terms of knowledge spillovers and externalities, particularly in the European (e.g. Cantwell and Santangelo, 1999; Cantwell and Piscitello, 2005) and the US context (Almeida, 1996).

3.2.2 Economic institutions and MNEs investments

The importance of economic institutions for economic performance and investments is widely acknowledged in the political economy literature (Knack and Keefer, 1995; Hall and Jones, 1999; Acemoglu and Robinson, 2005). Economic institutions affect the structure of incentives in the economy, influencing the stability and predictability of market (and non-market) transactions. In this sense they play a crucial role in shaping capital accumulation and (public and private) investments at all levels (Acemoglu et al., 2005). However, empirical research has primarily focused on domestic capital formation, with limited attention to the importance of economic institutions in driving foreign MNE investment decisions. Institutions influence MNEs' operations abroad by a) directly shaping the returns on their investments and the associated risk (direct effect); b) indirectly impacting upon other key investment drivers such as human capital and infrastructure (indirect effect) (see Knack and Keefer, 1995).

In particular the existing literature – still rather limited in terms of geographical coverage – has failed both to agree on the direct importance of institutional conditions versus other location drivers, and to reach a clear consensus on what typologies of institutions matter (if at all) for MNE investment decisions. The seminal contribution by Wheeler and Mody (1992) – looking at foreign investments of US Multinationals – combines a number of institutional indicators (including 'stability of labour', 'red tapes', 'quality of the legal system', etc.) and compares them with 'classical' factor endowment, agglomeration and 'openness' indicators. The empirical analysis concludes that US investments abroad

are not driven by the institutional environment of the recipient economies but by other factors only indirectly influenced by institutions: even though sectoral and geographical heterogeneity turns out to be significant, factor endowments and openness remain the key investment drivers.

This evidence has been challenged by a number of subsequent studies that try to open the institutional 'black-box', aiming to disentangle the relative importance of specific sub-components of the host institutional environment and its 'distance' from that of the MNE's home country. Very diverse sets of institutional conditions have been tested in different studies under the constraint of data availability for different groups of countries and time periods. Wei (2000) is the first study to re-open the debate by means of a comprehensive data set on bilateral FDI flows: his results suggest a negative relationship between corruption in the host country and FDI. Henisz (2000) looks at the negative impact of governance costs, while Campos and Kinoshita (2003) suggest that bureaucracy quality and rule of law are relevant drivers of FDI. In a similar vein, Globerman and Shapiro (2002) look at both inward and outward FDI in a large sample of countries, finding a significant and positive association between MNEs' investments and a composite indicator of institutional quality. Meon and Sekkat (2004) investigate the Middle East and North Africa (MENA) economies suggesting that it is political risk in general, rather than one particular institutional aspect, which limits FDI into a given country in the area. Bénassy-Quéré et al. (2007) – who look at the link between bilateral FDI flows and institutional quality (captured by means of Fraser Institute indicators as in the present paper) – conclude that "good institutions almost always increase the amount of FDI received" (p.780), at the same time stressing the heterogeneity associated to distance in terms of institutional

arrangements between the origin and the destination country of the investment.

A few complementary studies have looked at MNE location strategies at the sub-national level: within countries the degree of economic integration is higher and (formal) institutional arrangements are generally more homogenous, making it easier to capture the impact of other aspects of governance quality. Phelps et al. (2003), Phelps (2004), and Fuller (2005) find evidence of the importance of sub-national supportive institutions in different areas of the UK. Du et al. (2008) investigate the location decisions of US MNEs investing in Chinese provinces over the period 1993-2001 by looking at several indices of economic institutions. Using a conditional logit model the authors suggest that US MNE location behaviour reacts positively to stronger protection of property rights, relatively limited role of government in business, lower government corruption and more adequate contracting environment. These elements provide strong incentives to US MNEs to locate in Chinese provinces.

Another small number of studies have concentrated their attention on specific economic institutions and MNE behaviour. Three key dimensions emerge as the core components of *economic* institutions with a potential direct impact on the location decisions of foreign investments: regulatory framework conditions (with reference to both labour and capital investments, i.e. labour market and business regulations respectively), the legal environment (property rights and contracts' enforcement) and the role of public expenditure in the economy.

Labour market regulation

Existing literature on the relationship between labour market regulation and foreign investment is scant. Using OECD data, Dewitt et al. (2003) highlight that unfavourable employment protection differential

between destination and origin countries is harmful for investment. Other studies suggest that more flexible labour markets in recipient countries are positively correlated to higher inflows of investment from abroad (Cooke, 1997; Javorcik and Spatareanu, 2005). On the other hand, locating in a country with a more regulated labour market could be associated with a firm's higher productivity: thus, some stages of production or certain sectors will tend to locate in more regulated labour markets (Haucap et al., 1997).

Therefore, beyond the conventional belief and weak evidence that more rigid labour markets represent a cost for foreign investors, it is possible to argue that countries with different labour market regulations attract different types of foreign investment. For instance, Lee (2003) suggests that the existence of labour unions positively affects firms' greenfield location of new plants in the Korean automotive industry. Delbecque et al. (2014) – evaluating the impact of labour market institutions on the location strategies of French MNEs in the OECD countries – suggest that labour market rigidity might reduce FDI attractiveness, but the magnitude of the effect is limited when compared to other investment drivers such as market potential.

Business regulation

The empirical literature on the role of business regulation in general economic performance has only recently appeared (Djankov et al., 2006). In this respect, the quality of the business environment is a crucial determinant of performance since it stimulates investment. Accordingly, more business-friendly environments can be attractive for MNEs, which can operate in a context where bureaucratic and administrative costs are less relevant. Daude and Stein (2007) suggest that the regulatory quality is the single most important investment driver. Similar conclusions are reached by Kaditi (2013) looking at South-eastern European countries. Positive effects of a more deregulated business environment are also

suggested by Kaplan et al. (2011): however, the latter study also highlights that such effects are only temporary and much less important than conventional wisdom holds. Globerman and Shapiro (2002) conclude that it is not regulation per se that matters but the effectiveness of its implementation and enforcement.

Property rights

The role of property rights is widely debated in the existing literature on economic institutions. Acemoglu et al. (2001) claim that the protection of property rights plays a crucial role in shaping long-run development trajectories. First, more secure property rights both encourage individuals to invest and raise return rates by protecting against expropriation from the government or powerful groups (Besley, 1995; Goldstein and Udry, 2008). Secondly, uncertain property rights may determine costs that individuals have to pay to protect their property. Thirdly, secure property rights may facilitate gains from trade by enabling the mobility of assets as factors of production (Besley, 1995). As a consequence, MNEs may prefer locations where property rights are better acknowledged and rightfully protected by the legal system. Again there is no consensus in the empirical literature on the practical importance of this particular institutional aspect: Bénassy-Quéré et al. (2007) and Du et al. (2008) find a positive and significant effect, while Daniele and Marani (2011) suggest that only organised crime works as a deterrent for foreign investments while there is no effect of other property rights infringements.

Contract enforcement

The importance of contract enforcement relies on the fact that market transactions and the general functioning of the economy are more predictable when economic agents know that contracts will be legally binding and they can use courts to resolve business disputes. In this

respect, Markusen (2001) suggests that MNEs benefit from locations with strong and reliable contract enforcement since they can credibly commit to investment. Daude and Stein (2007) find a positive and significant impact in a large cross section of world economies, Kaditi (2013) confirms this result for Southern-European countries and Du et al. (2008) find evidence that better contract enforcement in Chinese regions attracts US multinationals.

Government Intervention

From a conceptual point of view, a large role of government could lead to inefficiencies and rent-seeking (Shleifer and Vishny, 1999). Therefore, MNEs may prefer location where governments play a relatively marginal role in the economy. For instance, Du et al. (2008) argue that stronger government intervention in business operations tends to discourage MNEs from locating in a particular region. Pogrebnyakov and Maitland (2011) reach similar conclusions looking at the telecommunication market in Europe and South America. On the other hand, however, governments often buy products from foreign firms, either directly or through state-owned enterprises, or purchase goods from domestic firms that are vertically connected with MNEs' subsidiaries. In this sense, larger public sector consumption may be an appealing feature for MNEs since it increases the size of host countries' markets.

3.3 Data

3.3.1 MNE Investment

We employ information on individual investment projects undertaken by MNEs over the period 2003-2008 provided by the *FDi Markets-Financial Times Business* database, which includes all cross-border

greenfield and brownfield investment.[22] Foreign firms' operations are identified by Financial Times analysts through a wide variety of sources, including nearly 9,000 media sources, project data from over 1,000 industry organisations and investment agencies, and data purchased from market research and publication companies. Furthermore, each project is cross-referenced across multiple sources and more than 90% of investment projects are validated with company sources. In addition, Crescenzi et al. (2014) show that investment decisions captured by this database are highly correlated with other macro-level data on FDI from UNCTAD and the World Bank.

Specifically, this paper makes use of investment projects originated in EU-15 countries and directed towards EU New Member States (NMS) and European Neighbouring Countries (NCs), the latter being Accession Countries (ACC), European Neighbourhood Policy (ENP) countries and the Russian Federation.[23] Since the aim of the analysis here is to investigate MNE location choices, only data on greenfield investment are considered, since the location of brownfield investment is clearly a function of greenfield investments undertaken in previous periods: hence, only greenfield investment are subject to a choice based on location attributes.

Table 3.1 provides information on new investment projects in 2003-2008 originating from EU-15 countries in NMS (panel A) and NCs, that is Balkan and Eastern countries (panel B) and Northern African and Middle East countries (panel C). It is not surprising that about 62% of EU-15 investors still choose to remain in the EU by selecting a destination

[22] In this database joint ventures are tracked only when they lead to new physical operations, whereas Mergers & Acquisitions as well as other equity investment are not included. Overall, the inclusion in the dataset is conditional on the fact that investment projects generate new employment or capital investment.
[23] Investment from the EU-27 and the whole world towards the same destination countries are also employed to test the attractiveness of the countries of interest with different samples.

among NMS.[24] In this area, Romania, Poland and Hungary are the top three destinations, with about 14.7%, 10.9% and 9.8% of EU-15 investment, respectively. The trend over the 2000s, however, suggests that the huge attractiveness of NMS reached its peak in anticipation to the full EU membership and it is now declining, replicating a pattern rather typical of previous EU enlargements and restructuring. In the NCs, instead, MNEs' presence has increased particularly since the mid-2000s. In terms of cumulative inflows, the most selected destination outside the European Union is Russia, with a share of 19%. The rest of the Balkans and the East attracts an additional 10% of EU-15 investment in the area, whilst Northern Africa and Middle East account for about 8%.

[Table 3.1 here]

3.3.2 Institutional Conditions

A large number of institutional variables are publicly available, ranging from measures of governance to political indicators. Nevertheless, as mentioned in previous sections, this paper is primarily concerned with the notion of economic institutions. The aim is in fact covering some aspects of national institutional settings that directly characterise a country's economic life and affect the degree of attractiveness towards foreign investment.

In line with other existing studies on foreign investments and institutions (e.g. Bénassy-Quéré et al. 2007; Delbeque et al. 2011), we employ data from the Fraser Institute as it provides information for all countries covered in our analysis. This dataset contains a number of indicators reflecting several economic dimensions of national institutional contexts. In particular, we employ the following four

[24] Most of NMS entered the EU in 2004, while Romania and Bulgaria joined in 2007.

measures of institutional quality: labour market regulation, business regulation, protection of property rights, and legal enforcement of contracts. In addition, we use data from the World Bank's World Development Indicators (WDI) to include the relevance of government expenditure in destination countries. With these five indicators we cover three main areas of the economic-institutional environment: (i) regulatory aspects (in labour market and business), (ii) legal aspects (property rights and contract enforcement), and (iii) extent of public intervention in the economy.

Labour market regulation: our variable for labour market regulation proxies the flexibility of national labour markets. This is an index encompassing information on countries' hiring and firing rules, collective bargaining, worker dismissal costs, conscription, working hours and minimum wage. Higher values of the index are associated to more flexible regulatory settings.

Business regulation: this indicator includes costs associated to bureaucracy, taxes, bribes and other administrative burdens that may discourage MNEs from starting a business in a country. As above, this is an index with higher values reflecting a less regulated environment.

Protection of property rights: we measure property rights protection by means of an index assuming higher values when property rights are more protected.

Legal enforcement of contracts: this aspect refers to the capacity and effectiveness of courts to enforce rules and contracts between parties. This is measured with an index taking higher values for countries with better contracting environments.

Government intervention: we employ the percentage of general government's final consumption expenditure on GDP, as provided by the World Bank's WDI.

Table 3.1 above includes information on the characteristics of the economic institutions of the countries under analysis. Institutional conditions are heterogeneous across the countries of the EU geographical vicinity but generally comparable. The NMs show, on average, higher values of the institutional indicators and generally higher shares of public expenditure in total GDP when compared to other countries in the group. The Balkans and the East, in comparison with the NMs, show lower average values for the economic institution indicators: this group includes some countries candidate to EU membership, a process that formally requires gradual institutional convergence towards EU standards. The final set of countries includes Northern Africa and the Middle East. In this group average values of the institutional indicators are upward biased by Israel and Jordan: after excluding these latter two countries, the average institutional quality of the area is lower than in the other groups. Overall, the countries covered in the analysis offer an ample variety of institutional arrangements that is deemed particularly suitable to test the location behaviour of MNEs.

3.3.3 Other location drivers

The analysis of the link between MNE location choices and economic institutions requires taking into account other relevant characteristics of the host economies. In line with the literature on MNE location choices, this paper employs several control variables that reflect different potential drivers for the localisation strategies of MNEs.

First, demand is considered as one of the main factors attracting European investors into foreign markets. Both internal and external demand is taken into account. Internal demand fundamentally reflects the market size of the host countries and it is measured through their own GDP at constant prices, in 2005 US dollars. In line with theory and

existing evidence, it is expected that a larger market size will attract more foreign investors (Wheeler and Mody, 1992; Billington, 1999). External demand is instead captured by means of a standard market potential (MP) indicator *á la* Harris (1954), as customary in the literature. Similar to the internal market demand, it is expected that market potential is positively associated with the location strategies of MNEs.

Trade costs are controlled for by employing a measure of geographical distance between the most populated cities of origin and destination countries in the sample: intuitively, greater geographical distance is expected to discourage foreign investors (Bevan and Estrin, 2004; Kleinert and Toubal, 2010). Furthermore, a dummy variable indicating national border contiguity between origin and destination countries is included.

Some characteristics of national labour markets are also controlled for. The education level of host countries is taken into account by means of the ratio of secondary school age population to total population. Notwithstanding the existence of better proxies of human capital at the national level, this appears to be the only available indicator for the destination countries in our sample. A positive relationship is expected between this variable and the location of MNEs. Moreover, the effect of average wage is indirectly captured through per capita GDP (see Alsan et al., 2006). Indeed, wage data are rarely available for most destination countries in the sample and per capita GDP may represent a fair alternative. A negative relationship is expected between this proxy for input cost and MNEs location behaviour.

Furthermore, different measures of agglomeration economies are considered. The percentage of urban population on total population is included to control for the relative importance of cities in generating

externalities (Glaeser et al., 1992; Head et al., 1995). An indicator for the stock of past foreign investment in location *j* is constructed. This measure captures firm-specific agglomeration effects that may derive from the advantages accruing to an MNE by locating where other MNEs have previously invested. Hence, the existing stock of investment should inform whether firms' past experience drives further location decisions (Basile et al., 2008). In constructing this variable available information on brownfield investment is also considered because corporate expansions signal to a new investor that previous multinational firms attach additional importance to a specific location. Since the mere count of investment projects undertaken in previous years does not reveal much about investors' behaviour, the analysis takes into consideration the potential occurrence of a 'national ownership' effect in each time period, which would suggests the existence of patterns in the strategies of MNEs on the basis of their nationality. Therefore, a stock variable is generated for each location according to the MNEs' country of origin: in line with studies exploring the role of agglomeration externalities, a positive relationship is expected with the location choice (Wheeler and Mody, 1992; Barrel and Pain, 1999).

A set of cultural variables includes dummies indicating whether origin and destination countries share cultural characteristics, thereby controlling for whether countries speak common official or unofficial languages, had a common colonizer after 1945, had a colonial relationship after 1945, and have been a single national entity. These variables are frequently employed in studies on the internationalisation decisions of firms (Rauch, 1999; Perez-Villar and Seric, 2014).

Finally, national fixed effects are included to control for any unobserved factor that operates at the country level and may play a role in attracting foreign investment.

Appendix C provides a description of all variables employed in the analysis; all are available for years from 2003 to 2008.

3.4 Methodology

3.4.1 Capturing MNEs heterogeneous preferences for economic institutions: Mixed Logit Models

Following McFadden (1974), the great majority of the empirical literature on investment location decisions implies that MNE strategies are fundamentally driven by individual maximization choices. In other words, it is thought that MNEs select locations on the basis of the expected utility or profit that each site may yield on the basis of the characteristics of the host economies. Conditional Logit (CL) models allow exploring the effect of alternative-specific attributes on the probabilities that firms select a particular location among the set of alternatives. The main assumption in the CL is the Independence of Irrelevant Alternatives (IIA), which implies that the error term ε_{ij} is independent across locations.

An extension of the analysis of MNE location behaviour is developed by implementing a Mixed Logit (MXL) model. This is basically a generalization of the standard logit and offers the possibility to relax completely any restriction associated with the IIA. The existing literature on MNE location choices has rarely employed MXL, despite the advantages associated to it. Notable exceptions are relatively recent and include works by Defever (2006; 2012), Cheng (2008) and Basile et al. (2008). The present analysis implements a random-coefficient derivation of the MXL, in line with Defever (2006; 2012) and Cheng (2008), with the aim of analysing whether MNEs have heterogeneous preferences over location attributes when they strategically select a location for greenfield

investment.[25] The analysis of the literature has shown that it is unrealistic to expect unambiguous results. Indeed, this paper aims to test if the lack of consensus on the role of specific institutional features of host economies might be explained precisely by the heterogeneity of MNEs' preferences over specific institutional attributes. It is plausible that some MNEs tend to prefer locations with weaker economic institutions because they aim at bypassing or eluding transparent market mechanisms when undertaking business operations abroad. For instance, weaker economic institutions might facilitate rent-seeking or moral hazard behaviour, the creation of monopolistic positions, or simply allow capturing a share of host countries' public resources, through lobbying, subsidies or less legalized channels, such as corruption. This is particularly relevant in the case of the present study since the locations of interest encompass several transition and developing economies that are characterized by little transparency, weak democratic decision-making processes as well as strong vested interests that may influence market mechanisms. To take this into consideration, random coefficients are attached to variables of economics institutions, while fixed coefficients are kept for the remaining location drivers.

Accounting for heterogeneity of MNE locations' characteristics formally means that the parameter β, associated with an observable characteristic x of location j, can vary randomly across MNEs. Formally, the profit equation that each firm maximizes when investing abroad can be specified as:

$$\pi_{ij} = \beta_i' x_{ij} + \varepsilon_{ij} \quad (1)$$

[25] Basile et al. (2008) adopt an error-component derivation aimed at investigating substitution patterns among alternative locations.

where the vector of parameters β' for firm i reflects firm's preference over observable location attributes x. Thus, in the setting of random-coefficient MLX parameters β are not fixed as in CL, but they can reveal MNEs' taste variation regarding location characteristics. Coefficients vary across MNEs in the population with distribution density $f(\beta)$. Following Train (2003), each MNE knows its own β_i (as well as ε_{ij}) for all alternatives and select the location that offers higher profit. However, random coefficients β_i remain unobserved and it is only possible to specify a distribution for them[26]. By doing this, parameters θ (i.e. mean b and standard deviation s) of the coefficients β_i can be estimated. In this paper, a normal distribution is specified for random coefficients associated with economic institutions. Thus, the analysis will inform whether MNEs exhibit heterogeneous tastes over different economic institutional settings. The unconditional choice probability to be estimated takes the following form:

$$P_{ij} = \int \left(\frac{e^{\beta' x_{ij}}}{\sum_k e^{\beta' x_{ik}}} \right) f(\beta|\theta) d\beta \quad (2)$$

This is the MXL probability, which basically consists of a weighted average of the product of logit equations evaluated at different values of β and where weights depend on the density $f(\beta \mid \theta)$ (Train, 2003). As mentioned, the aim is to estimate parameters θ, which is possible by means of simulation methods, which allow approximating probabilities for any given value of parameters θ. Thus, the simulated probability SP is initially computed as an average probability at different levels of β:

$$SP_{ij} = \frac{1}{R} \sum_{r=1}^{R} \frac{e^{\beta^r x_{ij}}}{\sum_k e^{\beta^r x_{ik}}} \quad (3)$$

[26] If the researcher knows β_i, this would allow estimating a choice probability similar to CL.

where R is the number of draws, or replications. Basically, for calculating the SP_{ij}, the logit equation (2) is computed with each draw r, and eventually averaged. In the present analysis, $R=500$. Successively, SP_{ij} is entered into the log-likelihood function to obtain the following simulated log-likelihood SLL:

$$SLL = \sum_{i=1}^{I} \sum_{j=1}^{J} y_{ij} ln SP_{ij} \quad (4)$$

where $y_{ij}=1$ if firm i chooses location j, zero otherwise. Therefore, it is possible to obtain the Maximum Simulated Likelihood (MSL) estimator which takes the value of θ that maximizes SLL.

3.5 Empirical Results

All estimations are conducted for EU-15 MNEs investing in European New Member States, Candidate/Accession, ENP countries and the Russian Federation. Additionally, estimations on investment from the EU-27 and the whole world are also run as a benchmark and robustness check in order to increase the size of the sample of foreign investments.[27]

3.5.1 Baseline results

Table 3.2 presents the results from CL estimations. Column 1 provides information for the baseline specification. The results suggest that three out of five indicators of the quality of economic institutions exhibit a positive and statistically significant relationship with the location decisions of MNEs: business regulation, government expenditure and legal enforcement of contracts. Conversely, labour market regulation and property rights protection are not significant. This specification

[27] CL results are qualitatively identical to EU-15 results and are available upon request. The main MXL results are included in the tables.

includes controls for market demand variables, proxies for trade costs (i.e. geographical distance between origin and destination countries and a dummy for contiguity), as well as dummies for cultural characteristics. All controls show the expected sign. Next, in columns 2 and 3, labour market characteristics such as education level of the population and average wage are included. Both enter the regression with the expected signs, although average wage is only weakly significant. Finally, we take into account agglomeration forces in the last two columns of Table 3.2. These turn out to be strongly correlated with the location strategies of MNEs. With the gradual inclusion of all our controls, the relevance of economic institutions evidenced in column 1 remains unchanged. MNEs from EU-15 appear to be sensitive to some aspects of the national economic institutional setting of host countries. More favourable business regulation, a stronger presence of the state in the economy and an appropriate contracting environment play a positive role in shaping the strategic behaviour of MNEs.

[Table 3.2 around here]

Moreover, our more extended specification (column 5) suggests that internal market size is positively associated with MNE decisions, whereas market potential becomes non-significant. Similarly, education loses importance, probably indicating that MNEs from EU-15 delocalize in the area of interest some business functions for which more basic skills are needed. Average wage is statistically insignificant. Finally, both measures of agglomeration are strongly and positively associated with the dependent variable. This suggests that agglomeration economies are likely to play a role in attracting MNEs. Similarly, a pattern of localization that follows national ownership lines emerges. In other words, MNEs from the same country of origin tend to undertake investment projects in the same locations.

Overall, the CL estimations are in line with the existing literature. While it is impossible to find any association between MNEs and the functioning of national labour markets, a less regulated business environment seems to attract foreign investment. Similarly, with respect to the legal aspects of economic institutions, different elements play different roles: the enforcement of contracts is a relevant institutional aspect for MNEs behaviour suggesting that MNEs are sensitive to the respect of formal contracts. On the other hand, property rights protection does not appear to be a driver of location decisions. Finally, the role of the state is considered as a positive determinant in MNE choices, presumably because they can take advantage from public intervention in the economy or because national governments expenditure is also aimed at consumption. These results suggest that a further investigation of the heterogeneity of MNE preferences is appropriate: thus, the following analysis explores the relationship between MNE strategic behaviour and the economic institutional environment of recipient economies by means of MXL. This approach makes it also possible to relax the IIA assumption that treats the substitution of alternative locations rather unrealistically.

3.5.2 Preference heterogeneity

In the MXL estimations heterogeneity is allowed to occur only for coefficients associated with economic institutions (variables of interest), while other regressors are kept fixed. Therefore, MXL estimates coefficient parameters θ, namely means b and standard deviations s, for variables that are specified to be random. MXL estimation results are presented in Table 3.3, where the extended specification is run for EU-15, EU-27 and world MNEs (columns 1, 3, and 5, respectively). As far as economic institutions are concerned, previous results are largely confirmed by the estimated means b of coefficients. Regulation is a driver of MNEs location choices in the context of national business

environments, but not in labour markets, although the mean coefficient for the latter is weakly significant when we consider MNEs from the whole world. A strong role of government expenditure in neighbouring countries is perceived as a positive signal by EU-15 MNEs and world MNEs, while it does not seem to be very relevant for the EU-27 sample (possibly because some of these investors are from NMS, which may be relatively more deterred by a large government role in the host economy). With respect to the national legal framework, a more effective contracting environment represents an important location determinant for foreign investment for all MNEs across specifications; as in previous results, property rights protection exhibits insignificant mean coefficients.

The MXL estimation also provides standard deviations *s* for the coefficients of economic institutions, which are specified to vary randomly. Some of the estimated standard deviations of these coefficients are statistically significant, suggesting that parameters do vary across the population of MNEs under analysis. Therefore, standard deviations can be interpreted as heterogeneity terms and suggest that different MNEs attach different importance to economic institutions, explaining the lack of consensus in the existing literature on the importance of some of their components. Values of *b* and *s* are employed in columns 2, 4 and 6 in order to gain insights on the extent of the heterogeneous preferences of MNE strategies over economic institutions. For instance, in the case of EU-15 MNEs, the variable for business regulation takes parameters *b=0.475* and *s=0.472*, such that for 84.4% of the MNE population the parameter is above zero, while for the 15.6% it is below. In other words, the large majority of FDI originating in the EU-15 systematically locates where doing business is characterised by weaker bureaucratic burdens, while the rest prefers to locate where business is more strongly regulated. This figure only varies slightly when EU-27 and world MNEs are considered (80.2% and 76.1%, respectively). More heterogeneous preferences emerge when we look at parameters related to the protection

of property rights. In the case of EU-15 and EU-27 MNEs, estimates indicate that the population is indeed split into two halves. This balance between shares of the population with respect to opposite preferences over property rights protection also explains the insignificance of the mean coefficient. Finally, as far as the legal enforcement of contracts is concerned, taste variation over this aspect of economic institutions is far less pronounced, with most MNEs preferring locations where the contracting environment is generally certain. Nevertheless, there is a very small portion of MNEs in the population that decides to locate where contract enforcement is weaker.

[Table 3.3 here]

Figure 3.1 depicts probability density functions for economic institutions by employing parameters estimated by MXL: the graphs refer to those aspects of economic institutions that exhibit significant heterogeneity terms *s*.

[Figure 3.1 here]

The heterogeneity of these relationships, particularly regarding property rights, poses interesting questions on MNEs strategies and their motives for investing abroad. The source of heterogeneous tastes may be associated with unobserved factors operating at the firm-level. Therefore, in order to explore the systematic nature of heterogeneity of preferences over economic institutions, the MXL models are run by exploiting information for sectors and business activities of the investment projects undertaken by MNEs. Data in *FDi Markets* provides information on these aspects. On this basis, following the NACE (rev.1.1) classification, we group sectors into four categories: High-Medium Technology Manufacturing, Medium-Low Technology Manufacturing, Knowledge-

intensive Services (KIS) and Less-knowledge-intensive Services (LKIS). Similarly, following Crescenzi et al. (2014), we generate three alternative groups of business functions: Headquarters and innovative activities (HQ & Inno); Services, sales and logistics (SSL); Production.[28] Tables C.2 and C.3 in Appendix C show the classification of sectors and business functions, respectively.

Table 3.4 presents the results for MXL estimations of EU-15 location decisions performed for different sectors, whilst Figure 3.2 plots the heterogeneous relationships that emerge from such estimations.

[Table 3.4 here]

[Figure 3.2 here]

In columns 1 and 2 of Table 3.4, regressions are run for High-Medium Technology Manufacturing sectors. The MXL reveals that regulation of labour markets does not matter for MNE decisions, while the intervention of the regulator in business has an ambiguous impact: the majority of MNEs in High-Medium Technology Manufacturing sectors prefer locations where administrative and bureaucratic aspects of running a business are less invasive (62.9%), while the rest prefers countries where businesses are subject to more regulation. Government expenditure does not play any role in driving MNEs' behaviour in these sectors. As far as legal aspects are concerned, MNEs in High-Medium Technology activities do attach importance to property rights protection only in 33% of cases. This result might seem surprising since it implies that a large group of MNEs from EU-15 investing in the area of neighbouring countries is driven by less robust property rights. However,

[28] Differently from Crescenzi et al. (2014), we generate three groups of functions instead of five due to the low number of observations in certain MNE activities in the countries here considered. Therefore, we aggregate together certain functions into the same category (e.g. headquarters with innovative activities).

this suggests that MNEs operating in High-Medium Tech sectors might strategically exploit a weaker enforcement of property rights to facilitate domestic firms' upgrading and learning (for example in the area of intellectual property rights, IPRs), while MNEs rely on internal firm-level protection mechanisms (see Wu 2000 for the case of IPRs in China). With respect to the legal enforcement of contracts, almost three quarters of MNEs in High-Medium Technology Manufacturing systematically locate in places where this aspect of economic institutions is more adequately protected.

Columns 3 and 4 report results for Medium-Low Technology Manufacturing. EU-15 MNEs in these activities react more homogeneously to the quality of national economic institutions than those in High-Medium Technology Manufacturing sectors. Indeed, a very large share of MNEs considers strong regulation in business as an obstacle (87.1%). Also the coefficient on labour market regulation turns to be marginally significant and positive, suggesting that MNEs in these activities tend to prefer countries where labour markets are more flexible, although the statistical relevance of this relationship remains weak. This finding is perfectly plausible since we are considering EU-15 MNEs that localise in the EU neighbourhood area operations characterised by a lower level of sophistication. This is also evidenced by the strongly negative coefficient associated to our proxy for average wage, signalling that MNEs in Medium-Low Technology Manufacturing sectors are motivated by the supply of inexpensive workforce that is generally low-skilled. With respect to government expenditure, we find that the mean coefficient b is not significant and the standard deviation s is only weakly significant. Although these parameters provide a figure of 99.9% of MNEs driven by more public spending, they should be cautiously interpreted given their very low statistical significance. MNEs in Medium-Low Technology Manufacturing activities do not seem to be sensitive to the

degree of protection of property rights, while they uniformly attach a great importance to the possibility to enforce legal contracts.

With respect to control variables, MNEs in High-Medium and Medium-Low Manufacturing sectors seem to be motivated by different rationales. Geographical distance and the previous presence of MNEs from the same origin country are the only common trait in MNEs strategies. MNEs in High-Medium Technology Manufacturing activities are substantially attracted by agglomeration forces, suggesting that MNEs tend to concentrate this kind of activities in urban areas where they can access a larger supply of labour and competences. Surprisingly, the education level of the population does not seem to be a relevant location driver, although our proxy for human capital only takes into account secondary education, which is probably inadequate for High-Medium Technology activities. MNEs in Medium-Low Technology Manufacturing activities, instead, seem to be essentially motivated by market-seeking and efficiency-seeking rationales, as suggested by the strongly significant coefficients of market size and average wage. This finding is in line with the great majority of literature on FDI in transition economies, which highlight that foreign investors search for new markets as well as cheap labour in Central and Eastern European countries (Resmini, 2000).

The right-hand part of Table 3.4 reports results for services: columns 5 and 6 regard KIS, whilst columns 7 and 8 present results for LKIS. MNEs in KIS tend invariably to take into consideration business regulation and the legal enforcement of contracts. Again, parameters on property rights suggest that this element is an ambiguous factor in determining EU-15 MNE strategies in EU neighbouring countries. As far as LKIS activities are concerned, results only slightly vary. The enforcement of contracts turns out to be unimportant for this kind of services, whilst LKIS seem to positively react to labour markets that are

more regulated and to larger government spending. Control variables in these regressions reveal that KIS benefit of a more educated workforce and also that location choices globally follow nationality patterns.

Table 3.5 presents the results of MXL performed for different groups of business functions, while the corresponding Figure 3.3 illustrates the variation of preferences across them.

[Table 3.5 here]

[Figure 3.3 here]

Columns 1 and 2 in Table 3.5 refer to operations of MNEs in HQ and Inno activities. Parameters on economic institutions are only significant with respect to business regulation and property rights protection. The former exhibits a weak and positive mean coefficient *b*, while the latter is still affected by a significant heterogeneity term *s* that splits the distribution of preferences into two halves. Our proxy for human capital, although positive, is not statistically significant, likely due to the fact that we only consider secondary education. In general, we do not detect strong drivers of location decisions of MNEs as far as HQ & Inno activities are concerned. A different picture emerges instead for SSL activities (columns 3 and 4). A more flexible regulation of business operations is a positive driver of location decisions for the great majority of MNEs (83.4%); whilst for the regulation in the labour market almost 60% of MNEs have a positive perception of flexibility, the rest seem to prefer more regulated frameworks. With respect to legal aspects, nearly all MNEs find that the legal enforcement of contracts is a crucial element (92.1%). In addition, SSL are clearly market-seeking motivated, and MNEs look for a relatively educated and less expensive labour force to

employ in these functions. Finally, columns 5 and 6 provide MXL results for production activities, whose picture appears less complex than for other business functions. Economic institutions have a very homogeneous impact and heterogeneity terms are never relevant: more flexible regulation in business, stronger government spending and relative easiness in enforcing legal contracts represent attraction forces for MNE production operations. Moreover, control variables tell that production activities of EU-15 MNEs are attracted by larger national markets and tend to exploit local low-skilled and cheap labour.

3.6 Conclusions

In recent years the EU has intensified economic and institutional integration with its neighbouring countries, though with different intensity. Some countries have become EU members, some are candidate for membership, and some others are part of the European Neighbouring Policy. In this scenario of growing integration, European MNEs have increased their operations in neighbouring countries through the setting up of new foreign affiliates.

This paper has examined how recipient countries' economic institutions shape the location strategies of EU-15 MNEs in a large set of developing and transition countries that are geographically close to the EU. The empirical analysis starts with a standard CL model, as customary in the literature, and is successively extended to a random-coefficient MXL, rarely adopted in studies on firms' location decisions. Results are robust across specifications with different data samples as well as across methodologies.

Table 3.6 provides an overall summary of the results on MNE heterogeneous preferences for economic institutions. In line with the existing literature our results confirm that the flexibility of the labour market – one of the top items in 'traditional' institutional reform

packages – is not systematically associated with the attraction of foreign investments. On the contrary, favourable business regulation is clearly an important driver of MNE location choices: when looking at the entire sample of MNEs large part of the distribution attaches a positive value to this characteristic. In addition the heterogeneity of preferences seems to be largely linked to the most sophisticated activities in sectoral (High-Medium tech sectors) and functional (HQs and Inno) terms.

The analysis of the role of the protection of property rights explains why the existing literature has so far failed to reach a clear consensus on its importance: MNEs are indeed strongly divided with reference to this specific dimension, particularly in the case of the most sophisticated sectors and functions. Conversely, for the enforcement of contracts the results highlight clear-cut MNEs' preferences for more 'certain' framework conditions across sectors (with the exception of LKI sectors) and functions. Finally, the relevance of public expenditure seems to be limited to production activities, where the government plays an important role in supporting demand.

[Table 3.6 here]

These results should be interpreted with caution. First, it is important to bear in mind that the methodology makes it impossible to draw any causal conclusions. The analysis of location patterns is able to control for a large number of possible confounding factors but reverse causality is still a possibility. Second, the time span covered by the analysis is still limited and the global economic crisis started in 2008, as well as the dramatic political changes in some of the countries covered in the analysis, call for extra care in the interpretation of the findings. Third, even though the innovative use of quantitative methods makes it possible to shed new light on the heterogeneous behaviour of MNEs with reference

to economic institutions, more qualitative work is necessary (and is in our agenda for future research) in order to explore the firm-specific determinants of MNEs' diversified preferences.

Having acknowledged these limitations, our results provide policy makers with relevant insights to support institutional reform and institution building initiatives as tools to favour (and complement) internationalisation processes. The empirical results suggest that some MNEs prefer locations where specific dimensions of economic institutions are weaker. This may appear counterintuitive, but indeed there could be situations in which economic actors may prefer loose economic institutions in order to gain selective economic rewards. This institutional subversion phenomenon is particularly documented in the case of transition economies, where political and economic elites replicate a system of flawed institutional environments that provide them with various types of advantage over the rest of the local population (Helmann, 1998; Helmann et al., 2000). Similarly, weak property rights allow wealthier foreign actors to benefit from unproductive activities such as rent-seeking, at the same time maintaining expropriation instruments over the rest (Sonin, 2003). The subversion of economic institutions is also intimately associated with within-country inequality, and less secure property rights and weaker legal systems favour a country's power establishment, which aims at perpetuating the mechanisms that allow the concentration of power and wealth (Glaeser et al., 2003). In this vein, it is argued that political incumbents support imperfect institutions in order to maintain their benefits (Glaeser and Shleifer, 2002). On the basis of these considerations, often made with respect to transition and developing countries, it can be argued that some MNEs are oriented towards locations where they can establish influential connections with political and economic elites, which in turn allow them taking advantage of institutional poorness by obtaining rents or circumventing market

rules. A similar argument is proposed in the management literature: pervasive government corruption can influence the entry modes of MNEs, which can find it beneficial to enter new markets via FDI by engaging in corrupt behaviour (Rodriguez et al., 2005). Again, this may represent one explanation for the heterogeneity of results associated to the protection of property rights in particular. However, validating these results and investigating further the relationship between economic institutions and MNEs remain an open research field and a crucial challenge for policy design in a growing number of countries and regions worldwide.

Table 3.1: EU-15 investment projects and quality of economic institutions, 2003-2008.

	MNEs Investments		Quality of Economic Institutions				
Host Countries	N of investment	% investment	Labour market regulation	Business regulation	Protection of property rights	Legal enforcement of contracts	Government expenditure
A. New Member States							
Bulgaria	551	8.00	6.96	5.60	4.09	4.77	17.97
Czech Republic	443	6.43	7.47	5.16	5.72	3.59	21.46
Estonia	142	2.06	5.87	7.37	7.25	6.02	17.58
Hungary	674	9.79	6.84	6.12	6.51	7.06	22.45
Latvia	152	2.21	6.43	6.29	5.88	7.25	18.50
Lithuania	139	2.02	5.45	6.50	5.80	7.35	19.04
Poland	748	10.86	6.52	5.49	4.66	4.27	18.12
Romania	1,012	14.69	5.91	6.54	4.77	5.17	12.19
Slovakia	319	4.63	7.61	5.85	5.98	4.59	18.42
Slovenia	100	1.45	5.44	6.34	6.27	3.93	18.46
Subtotal / Average*	4,280	62.14	6.45*	6.13*	5.69*	5.40*	18.42*
B. Balkans and the East							
Albania	38	0.55	5.79	5.67	3.30	5.17	9.31
Croatia	139	2.02	5.65	5.62	4.70	5.40	19.95
Russia	1,315	19.09	6.03	4.73	3.34	7.53	17.38
Turkey	298	4.33	4.09	6.29	5.06	6.16	12.34
Ukraine	263	3.82	6.22	4.08	3.40	5.29	18.18
Subtotal / Average*	2,053	29.81	5.56*	5.28*	3.96*	5.91*	15.43
C. Northern Africa and Middle East							
Algeria	105	1.52	4.96	5.62	4.25	4.39	12.43
Egypt	84	1.22	5.01	5.06	5.77	3.41	12.03
Israel	37	0.54	4.84	6.64	6.98	3.46	25.71
Jordan	23	0.33	8.38	6.45	7.18	3.38	22.01
Morocco	203	2.95	3.62	6.09	5.62	4.3	18.31
Tunisia	103	1.50	6.30	6.79	7.00	4.88	16.67
Subtotal /Average*	555	8.06	5.52*	6.11*	6.13*	3.97*	17.86*
Total / Average*	6,888	100	5.97*	5.92*	5.41*	5.11*	17.55*

Source: own elaboration based on FDi Markets – FT Business and Fraser Institute Data

Table 3.2: Conditional Logit estimation of EU15 MNEs location behaviour

Dep.Var.: Location choice	(1)	(2)	(3)	(4)	(5)
Labour Market Regulation	0.018	0.028	0.044	-0.004	-0.010
	(0.043)	(0.044)	(0.045)	(0.049)	(0.049)
Business Regulation	0.401***	0.393***	0.382***	0.371***	0.434***
	(0.057)	(0.057)	(0.058)	(0.058)	(0.058)
Government Expenditure	0.059***	0.065***	0.0623***	0.067***	0.045***
	(0.014)	(0.014)	(0.014)	(0.014)	(0.015)
Protection of Property Rights	0.0017	0.012	0.026	0.010	0.005
	(0.039)	(0.039)	(0.040)	(0.040)	(0.040)
Legal Enforcement of Contracts	0.567***	0.559***	0.560***	0.683***	0.591***
	(0.128)	(0.129)	(0.127)	(0.138)	(0.139)
ln Market Size $_{t-1}$	-0.455	0.352	1.189	0.919	2.441**
	(0.781)	(0.837)	(0.961)	(0.974)	(0.988)
ln Market Potential $_{t-1}$	1.728**	2.405***	2.591***	2.044**	0.979
	(0.860)	(0.891)	(0.896)	(0.911)	(0.917)
Distance	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ln Education Level		1.291***	0.977**	0.487	0.709
		(0.470)	(0.495)	(0.527)	(0.530)
ln Average Wage			-1.343*	-0.402	-0.963
			(0.777)	(0.854)	(0.860)
Urban Agglomeration				0.149**	0.151***
				(0.058)	(0.058)
National Ownership					0.003***
					(0.001)
Observations	148,783	148,783	148,783	148,783	148,783
Cultural dummies	Yes	Yes	Yes	Yes	Yes
Geographical contiguity	Yes	Yes	Yes	Yes	Yes
National dummies	Yes	Yes	Yes	Yes	Yes
Pseudo R2	0.193	0.194	0.194	0.194	0.196
log likelihood	-17084	-17080	-17078	-17075	-17037

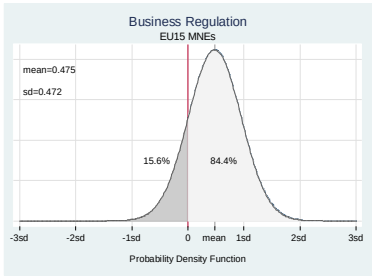
Robust standard errors in parentheses. ***
p<0.01, ** p<0.05, * p<0.1

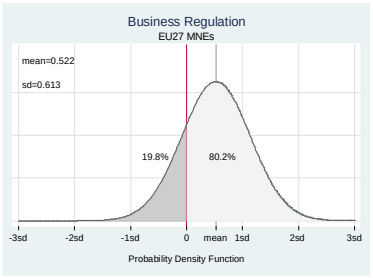
Table 3.3: Mixed Logit estimation of MNEs location behaviour

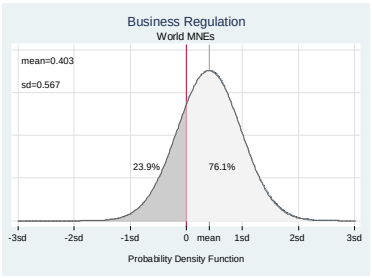
		(1)	(2)	(3)	(4)	(5)	(6)
		EU15 MNEs		**EU27 MNEs**		**World MNEs**	
Dep. Var.: Location Choice	θ	Value	% > 0	Value	% > 0	Value	% > 0
Labour Market Regulation	*b*	0.007		0.024		0.072*	
		(0.051)		(0.049)		(0.039)	
	s	0.015		0.171		0.008	
		(0.036)		(0.192)		(0.016)	
Business Regulation	*b*	0.475***	84.4%	0.522***	80.2%	0.403***	76.1%
		(0.064)		(0.063)		(0.047)	
	s	0.472***		0.613***		0.567***	
		(0.113)		(0.100)		(0.074)	
Government Expenditure	*b*	0.035**		0.021		0.025**	
		(0.016)		(0.015)		(0.012)	
	s	0.001		0.001		0.001	
		(0.001)		(0.001)		(0.001)	
Protection of Property Rights	*b*	0.002	50.4%	0.035	54.4%	0.001	
		(0.043)		(0.042)		(0.032)	
	s	0.229**		0.322***		0.133	
		(0.097)		(0.085)		(0.103)	
Legal Enforce of Contracts	*b*	0.570***	98.4%	0.500***	94.7%	0.467***	89.3%
		(0.148)		(0.138)		(0.110)	
	s	0.265***		0.309***		0.376***	
		(0.097)		(0.094)		(0.069)	
ln Market Size $_{t-1}$		1.963*		2.688***		2.148***	
		(1.018)		(0.748)		(0.563)	
Distance		-0.001***		-0.001***		-0.001***	
		(0.000)		(0.000)		(0.000)	
ln Market Potential $_{t-1}$		1.247		1.080		-0.588	
		(0.977)		(0.885)		(0.680)	
ln Education Level		0.536		1.184**		0.708*	
		(0.552)		(0.478)		(0.392)	
ln Average Wage		-1.490*		-1.997***		-1.662***	
		(0.887)		(0.729)		(0.576)	
Urban Agglomeration		0.146**		0.0754*		0.098***	
		(0.060)		(0.041)		(0.031)	
National Ownership		0.004***		0.006***		0.006***	
		(0.001)		(0.001)		(0.001)	
Observations		148,783		165,724		251,276	
N of Cases		6,888		7,709		11,745	
Geographical contiguity		Yes		Yes		Yes	
Cultural dummies		Yes		Yes		Yes	
National dummies		Yes		Yes		Yes	
log likelihood		-17030		-18974		-29437	

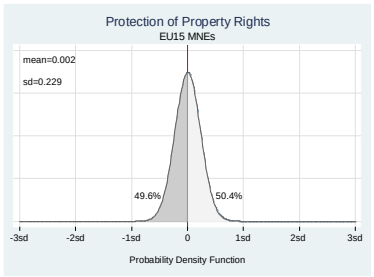
Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

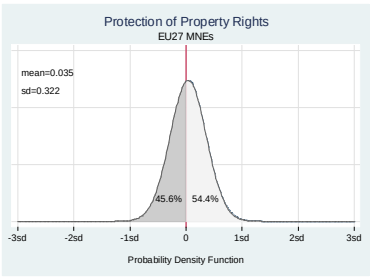
Figure 3.1: Probability Density Functions for economic institutions exhibiting significant standard deviation in Table 3

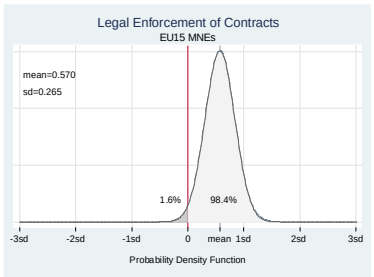


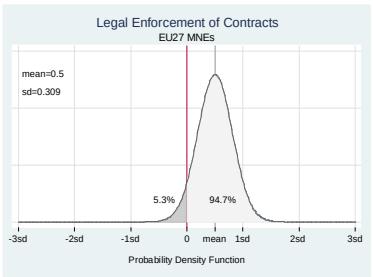












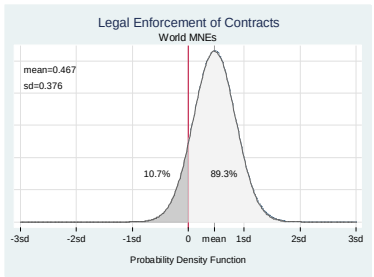
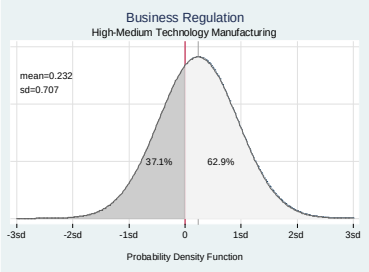


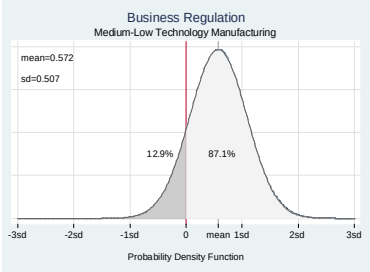
Table 3.4: MXL estimation of EU-15 MNEs location behaviour by sector

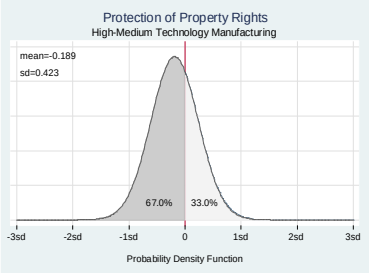
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		Manufacturing				**Services**			
		High-Medium Tech.		Medium-Low Tech.		Knowledge-intensive		Less-knowledge-int.	
Dep. Var.: Location Choice	θ	Value	% > 0	Value	% > 0	Value	% > 0	Value	% > 0
Labour Market Regulation	*b*	-0.030		0.149*		0.002		-0.246**	
		(0.128)		(0.083)		(0.112)		(0.123)	
	s	-0.105		0.005		0.013		0.206	
		(0.688)		(0.020)		(0.026)		(0.244)	
Business Regulation	*b*	0.232	62.9%	0.572***	87.1%	0.383**		0.406***	
		(0.160)		(0.106)		(0.157)		(0.152)	
	s	0.707***		0.507***		0.310		-0.014	
		(0.265)		(0.145)		(0.405)		(0.020)	
Government Expenditure	*b*	-0.013		0.043	99.9%	0.022		0.086**	
		(0.040)		(0.026)		(0.034)		(0.039)	
	s	-0.016		0.002*		0.008		-0.000	
		(0.026)		(0.001)		(0.011)		(0.001)	
Protection of Prop. Rights	*b*	-0.189**	33.0%	0.086		-0.011	49.2%	0.046	55.6%
		(0.093)		(0.069)		(0.099)		(0.105)	
	s	0.423*		-0.019		0.528***		0.333*	
		(0.217)		(0.019)		(0.113)		(0.178)	
Legal Enforc. of Contracts	*b*	0.539	72.6%	0.740***		0.725**		0.095	
		(0.381)		(0.239)		(0.325)		(0.318)	
	s	0.894**		0.229		0.235		-0.004	
		(0.389)		(0.221)		(0.234)		(0.025)	
ln Market Size $_{t-1}$		-0.648		4.576***		0.910		0.450	
		(2.518)		(1.242)		(1.742)		(1.814)	
Distance		-0.001***		-0.001***		-0.001***		-0.001***	
		(0.000)		(0.000)		(0.000)		(0.000)	
ln Market Potential $_{t-1}$		2.338		0.720		3.135		0.717	
		(2.752)		(1.593)		(1.922)		(2.377)	
ln Education Level		-1.262		0.286		2.844**		0.101	
		(1.400)		(0.830)		(1.286)		(1.367)	
ln Average Wage		0.593		-3.821***		-0.234		-0.905	
		(2.172)		(1.289)		(1.799)		(1.764)	
Urban Agglomeration		0.432***		0.105		-0.029		-0.021	
		(0.142)		(0.072)		(0.090)		(0.107)	
National Ownership		0.003***		0.004***		0.004***		0.003***	
		(0.001)		(0.001)		(0.001)		(0.001)	
Observations		31,039		56,795		28,065		27,357	
Geographical contiguity		Yes		Yes		Yes		Yes	
Cultural dummies		Yes		Yes		Yes		Yes	
National dummies		Yes		Yes		Yes		Yes	
log likelihood		-3497		-6394		-3230		-3039	

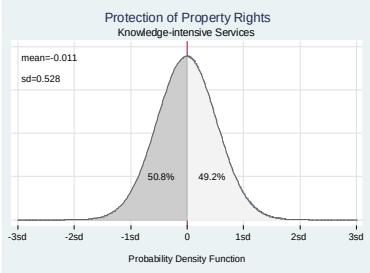
Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

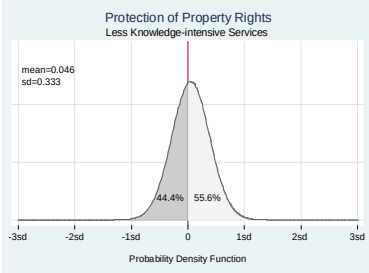
Figure 3.2: Probability Density Functions for economic institutions exhibiting significant standard deviation in Table 4











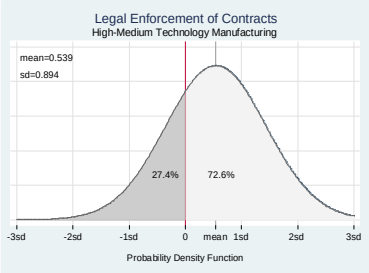


Table 3.5: MXL estimation of EU-15 MNEs location behaviour by business function

		(1)	(2)	(3)	(4)	(5)	(6)
		HQ & Inno		**SSL**		**Production**	
Dep. Var.: Location Choice	θ	Value	% > 0	Value	% > 0	Value	% > 0
Labour Market Regulation	*b*	-0.003		0.069	58.7%	-0.078	
		(0.138)		(0.081)		(0.077)	
	s	0.011		0.312*		0.037	
		(0.008)		(0.185)		(0.089)	
Business Regulation	*b*	0.328*		0.527***	83.4%	0.443***	
		(0.190)		(0.109)		(0.088)	
	s	0.512		0.541***		0.265	
		(0.369)		(0.157)		(0.239)	
Government Expenditure	*b*	-0.029		0.015		0.083***	
		(0.041)		(0.025)		(0.024)	
	s	-0.002		0.001		-0.006	
		(0.003)		(0.002)		(0.005)	
Protection of Prop. Rights	*b*	-0.015	48.8%	0.071		-0.070	
		(0.118)		(0.066)		(0.064)	
	s	0.550***		-0.097		0.193	
		(0.138)		(0.249)		(0.159)	
Legal Enforce of Contracts	*b*	-0.027		0.544**	92.1%	0.764***	
		(0.397)		(0.221)		(0.207)	
	s	-0.271		0.386**		0.203	
		(0.231)		(0.157)		(0.155)	
ln Market Size $_{t-1}$		0.816		4.108***		2.505**	
		(2.070)		(1.234)		(1.094)	
Distance		-0.001***		-0.001***		-0.001***	
		(0.000)		(0.000)		(0.000)	
ln Market Potential $_{t-1}$		0.794		1.960		-1.596	
		(2.199)		(1.522)		(1.433)	
ln Education Level		1.849		1.839**		-1.458*	
		(1.559)		(0.767)		(0.880)	
ln Average Wage		0.953		-2.382*		-2.790**	
		(2.117)		(1.219)		(1.153)	
Urban Agglomeration		0.037		0.099		0.116*	
		(0.106)		(0.069)		(0.063)	
National Ownership		0.003***		0.004***		0.004***	
		(0.001)		(0.001)		(0.001)	
Observations		19,994		64,381		64,408	
Geographical contiguity		Yes		Yes		Yes	
Cultural dummies		Yes		Yes		Yes	
National dummies		Yes		Yes		Yes	
log likelihood		-2293		-7372		-7204	

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Figure 3.3: Probability Density Functions for economic institutions exhibiting significant standard deviation in Table 5

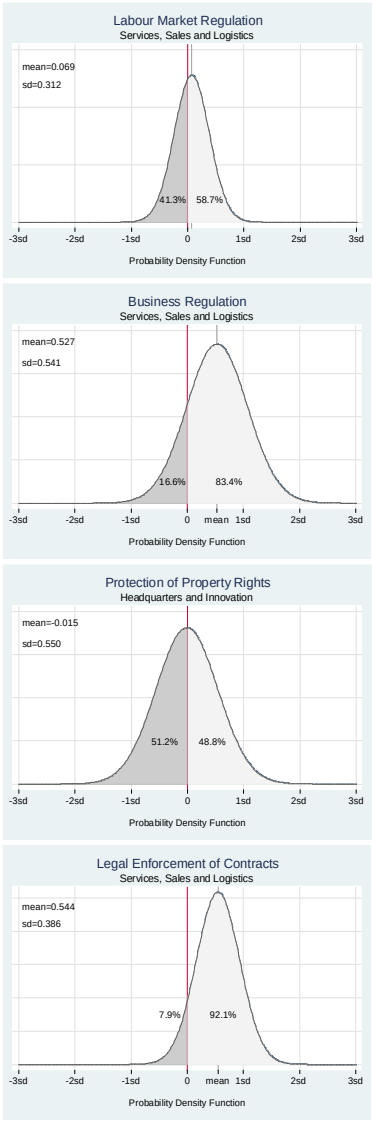


Table 3.6: Summary Table of the Results on MNEs heterogeneous preferences for Economic Institutions

	All MNES	Sectoral Heterogeneity				Functional Heterogeneity		
		Manufacturing		Services				
		High-Medium tech	Medium-low tech	Knowledge Intensive	Less Knowledge Intensive	HQ & Inno	SSL	Production
Regulatory settings								
Labour Market Regulation	NO	NO	NO	NO	NO	NO	NO	NO
Business Regulation	+*** s*** (84%)	s*** (63%)	+***	+**	+***	NO	+*** s*** (83%)	+***
Legal Framework								
Property Rights	s*** (50%)	-** s* (33%)	NO	s***(49%)	NO	s*** (49%)	NO	NO
Enforcement of Contracts	+*** s***(98%)	s**(73%)	+***	+**	NO	NO	+** s**(92%)	+***
Weight of the Government								
Share of Public Spending	+**	NO	NO	NO	NO	NO	NO	+***

+/- denotes the sign of the estimated *b* coefficients in tables 3,4 and 5. Asterisks denote significance as in original tables. Percentages reported in parentheses are %>0 in the preferences distribution. 'NO' stands for 'No significance'

Appendix C

Table C.1: Variable definitions and sources

Variable	Description	Source
	Dependent	
Location Choice	Dummy indicating location choices among 23 destination countries	FDi Markets
	Independent	
Economic Institutions		
Labour Market Regulation	Index (0-10) indicating the flexibility of labour market in location *j*.	Fraser Institute
Business Regulation	Index (0-10) indicating the administrative and bureaucratic burdens for business in location *j*.	Fraser Institute
Protection or Property Rights	Index (0-10) indicating the extent to which government protects property rights in location *j*.	Fraser Institute
Legal Enforcement of Contracts	Index (0-10) indicating the extent to which contracts are enforced by courts in location *j*.	Fraser Institute
Government expenditure	Percentage of general government final consumption expenditure on GDP in location *j*.	WDI
Demand		
Ln Market Size$_{t-1}$	Log of GDP of destination *j* at time *t-1*.	WDI
Ln Market Potential$_{t-1}$	Log of the sum of distance-weighted GDP of all countries *c* within 1,000km from location *j* at time t-1, *i* for each *c≠j*.	WDI / CEPII
Trade Costs		
Geogr. Distance	Physical distance measured in km.	CEPII
Geogr. Contiguity	Dummy equal to 1 if country of origin *r* and destination *j* are contiguous.	CEPII
Labour Market		
Ln Education Level	Log of the ratio between secondary school age population and total population in location *j*.	UNESCO
Ln Average Wage	Log of per capita GDP in location *j*.	WDI
Agglomeration		
Urban Agglomeration	Percentage of urban population on total population.	WDI
National Ownership	Stock of investment in location *j* from the same country of origin *r* of firm *i*.	FDi Markets
Culture		
Official Language	Dummy equal to 1 if country of origin *r* and location *j* share an official common language.	CEPII
Unofficial Language	Dummy equal to 1 if country of origin *r* and location *j* share an unofficial common language.	CEPII
Common Colonizer after 1945	Dummy equal to 1 if country of origin *r* and location *j* had a common colonizer after 1945.	CEPII
Colonial Link after 1945	Dummy equal to 1 if country of origin *r* and location *j* had a colonial tie after 1945.	CEPII
Same Country	Dummy equal to 1 if country of origin *r* and location *j* have been part of the same country in the past.	CEPII

Table C.2: Classification of sectors

Manufacturing	
High-Medium Technology	**Medium-Low Technology**
Aerospace	Beverages
Automotive components	Building and Construction Materials
Automotive OEM	Consumer Products
Biotechnology	Food and Tobacco
Business Machines and Equipment	Metals
Ceramic and Glass	Minerals
Chemicals	Non-Automotive Transport OEM
Consumer Electronics	Paper, Printing and Packaging
Electronic Components	Plastics
Engines and Turbines	Rubber
Industrial Machinery, Equipment and Tools	Textiles
Medical Devices	Wood Products
Pharmaceuticals	
Semiconductors	
Services	
Knowledge-Intensive	**Less Knowledge-Intensive**
Business Services	Hotels and Tourism
Communications	Leisure and Entertainment
Financial Services	Real Estate
Healthcare	Transportation
Software and IT Services	Warehousing and Storage
Space and Defence	

Table C.3: Classification of business functions

Headquarters and innovative activities
Business Services
Headquarters
Design, Development and Testing
Education and Training
Research and Development
Services, Sales and Logistics
Customer Contact Centre
Logistic, Distribution and Transportation
Maintenance and Servicing
Recycling
Retail
Sales, Marketing and Support
Shared Services Centre
Technical Support Centre
Production
Construction
Electricity
Extraction
ICT and Internet Infrastructure
Manufacturing

Part II: Selection Patterns in Cross-border Acquisitions

Chapter 4 – Cross-border acquisitions and patterns of selection: Productivity vs. profitability

4.1 Introduction

In the last two decades a substantial preference for mergers and acquisitions (M&A) over greenfield FDI has been frequently observed in global modes of entry by multinational enterprises (MNEs) (Barba Navaretti and Venables, 2004; UNCTAD, 2010). This is particularly the case of FDI among industrialized countries, where market access is often attained through the acquisition of a pre-existing domestic firm rather than by building a new establishment.

Yet, academic research has only very recently started to distinguish, theoretically and empirically, between different modes of FDI (i.e. M&A vs. greenfield) although their characteristics, causes and implications differ significantly (Nocke and Yeaple, 2007; 2008). Hence, understanding what shapes selection in cross-border acquisition choices of MNEs represents a relevant area of enquiry for its academic novelty as well as its importance in terms of share of acquisitions in global FDI volumes. In this respect, this paper explores the importance of two main alternative factors underpinning MNEs decisions to acquire a specific target firm: namely, a productivity argument related to accessing foreign valuable assets possessed by target firms, and a profit consideration associated with the expansion of corporate business in new foreign destinations.

Consider, for instance, from Chapter 2, the case of PZL-Świdnik, a polish manufacturer of helicopters acquired by the Italian conglomerate

Finmeccanica through its Anglo-Italian subsidiary AgustaWestland in 2010. According to the Chairman and CEO of Finmeccanica this acquisition generates strong opportunities for the parental industrial group because of both the expertise of PZL-Świdnik in producing aerostructures as well as the access that this specific takeover gives to new and profitable markets[29].

This example not only demonstrates that the productivity and profitability of target firms are crucial factors that MNEs take into account when engaging in cross-border takeovers, but it also suggests that distinguishing between these two elements is not always straightforward as they can be simultaneously at work.

The empirical study of the selection decisions of MNEs is surprisingly underdeveloped in the literature, mainly due to the lack of time varying information on firm ownership. Indirect empirical findings in the literature on FDI-induced spillovers suggest that MNEs tend to 'cherry-pick' best performing domestic firms (Arnold and Javorcik, 2009; Ramondo, 2009; Criscuolo and Martin, 2009). Only in most recent years scholars have started to engage in the empirical investigation of the selection decisions of MNEs, providing initial evidence supporting target firms' productivity as a motivating factor of international takeovers (Guadalupe et al., 2012; Blonigen et al., 2014).

Building on this theme, this paper assesses the extent to which the probability faced by domestic firms of being acquired in any given year relates to their productivity and profitability. Conceptually, these motivating factors can be ascribed to two traditional hypotheses in the theory of MNEs, namely asset-seeking and market-seeking behaviour of global companies. The joint assessment of these hypotheses employing firm-level data represents a first novelty of this paper, in that past studies on cross-border acquisitions mainly focus on productivity

[29] Finmeccanica Press Release "AgustaWestland acquires helicopters and aerostructures manufacturer PZLSwidnik", Rome 18 August 2009.

differentials. Nonetheless, as evidenced by the example presented above, while productive assets and capabilities embedded in existing domestic firms can be relevant aspects that MNEs take into account in the selection of an acquisition target, MNEs can also engage in cross-border takeovers to obtain a significant spot in a specific market. The latter strategy is in line with the objective of gaining direct access to the existing and promising business linkages of the acquired firm. Hence, domestic firms experiencing positive changes in their profits over time may be plausibly selected for acquisition.

In order to separately analyse the effect of target firm productivity and that of profitability, we exploit within-firm differences in the probability of being acquired, similarly to Blonigen et al. (2014), and we additionally compare acquired firms with those that are never acquired in the study period in order to alleviate any concern related to sample selection.

Hence, domestic firms experiencing positive changes in their businesses and profits may be more plausibly selected for acquisition.

This paper is also innovative as we conduct the study on a large sample of European manufacturing firms, as opposed to previous studies that only focus on companies in single countries or on industry- and country-level data. Our panel is drawn from Bureau Van Dijk databases Orbis and Zephyr and it includes 306,247 potential target firms observed at multiple points in time over the period 1997-2013. In addition, by employing time varying ownership information on domestic companies we are able to observe at what point MNEs acquire domestic firms.

Our main empirical finding is that domestic companies that experience positive changes in profitability have higher probability than others of being acquired over the sample period. A within-firm increase of one standard deviation in profitability as compared to the industry mean is associated to a 0.8% higher probability of being acquired by a foreign MNE in the next period. By contrast, within-firm variation in productivity does not significantly relate to international acquisition decisions,

suggesting that MNE selection only occurs on the observable market performance (i.e. profitability) of domestic firms. These findings are confirmed also by employing different measures of firm productivity and profitability. Furthermore, baseline results still hold across a large number of checks and extensions, indicating that within-firm differences in profitability are intimately associated to changes in ownership.

Understanding the selection patterns of cross-border takeovers is highly relevant for public policies in both territorial and industrial perspectives. In presence of FDI-induced spillovers, in fact, designing regional and industrial programmes aimed at FDI attraction can be beneficial for the recipient economy. In addition, acquired firms could benefit from the enlarged market that being part of a global production chain entails, with potential positive effects also on domestic employment and on the local network of suppliers.

The paper is structured as follows: the next section is devoted to a critical discussion of the literature on international acquisitions and setting up of hypotheses. Section 3 presents data and the construction of the dataset. Section 4 explains the empirical setting of the paper and its differences as compared to previous studies. Results are presented in Section 5 along with a discussion of the findings associated to several extensions and robustness checks. Section 6 offers some concluding remarks as well as considerations for policy.

4.2 Related literature

The notion of cross-border investment is intimately associated with the conceptualisation of the boundaries of the MNE, thus, encompassing the idea of a trade-off between integration and outsourcing of activities overseas. This appears to be a nontrivial choice for the management of a MNE, faced with the issue of internalisation of a specific operation via FDI and its governance costs. From a theoretical standpoint, the

international trade literature has conceived the internalisation decision as a transaction-cost problem (Grossman and Helpman, 2002) or as a response to the issue of incomplete contracts between partner firms (Antrás, 2003; Antrás and Helpman, 2004 and 2008).

Once a MNE decides to undertake FDI, it can do so mainly by establishing a new plant (greenfield FDI) or by acquiring an existing domestic firm. This organisational choice depends upon a number of elements such as recipient country attributes, industry characteristics and MNEs features (Nocke and Yeaple, 2007; 2008). While the determinants of greenfield FDI have received wide empirical attention by researchers, mainly through analyses of location behaviour, there is still a substantial lack of systematic evidence on the drivers of selection decisions of MNEs when they undertake cross-border acquisitions. Reasonably, cross-border acquisitions, far from being casual business choices, follow specific paths that spring from the interplay between the complexity of internalisation strategies of MNEs and the characteristics of heterogeneous domestic firms. In this respect, a nascent strand of literature has commenced to explore this area of enquiry shedding light on a number of factors driving MNE selection decisions. In the remaining of this section, these recent contributions will be reviewed and discussed.

4.2.1 Acquisitions to access foreign productive assets

The evidence that MNEs expand overseas by acquiring domestic firms in foreign countries is often interpreted as a corporate strategy aimed at enhancing MNEs existing capabilities (Caves, 1996). This form of asset-seeking investment is regarded as an expedient of MNEs to advance their competitiveness at the global level through the enlargement and

deepening of their portfolio of tangible and non-tangible assets[30] (Dunning and Lundan, 2008).

An underlying assumption in the logic of asset-seeking investment is that some firms possess assets that are desirable to other firms, including pure capital goods, specific technical competencies or managerial and marketing skills (Iammarino and McCann, 2013). Hence, acquisition activity can be aimed at accessing these assets, which lead in turn to the realisation of efficiency gains through the exploitation of similarities between the acquirer and the target firm. In Jovanovic and Braguinsky (2004), for instance, better managers tend to buy better projects and the complementarity between the qualities of their assets lead to the generation of surplus. Nocke and Yeaple (2008) develop an equilibrium model to explain greenfield FDI and cross-border takeovers, arguing that MNEs engage in acquisitions in order to complement own assets with target firms' assets. In other words, acquisitions lead MNEs to purchasing complementary activities overseas that the acquirer initially lacks. In their model, hence, a mechanism of positive assortative matching entails that better entrepreneurs purchase better production facilities, thus generating higher profits. A further motive for engaging in international acquisitions recalls the resource-based view of the firm and it contemplates the existence of non-mobile capabilities owned by local firms (Nocke and Yeaple, 2007). MNEs are thereafter pushed to acquire domestic firms abroad in order to exploit strategic complementary capabilities that are not transferable across borders. In line with the complementarity of assets view, Head and Ries (2008) adopt a gravity and multi-country analytical framework to study bilateral and multilateral FDI, suggesting that cross-border acquisitions function as

[30] Such a view also provides the cornerstone for evolutionary conceptualizations of MNEs, where FDI serves as an instrument to define and refine new corporate technological trajectories (e.g. Cantwell, 1989; Kogut and Zander, 1993).

an exploitative mechanism of corporate control of overseas productive assets.

Recently, a number of contributions investigate more specifically the incidence of target firms' assets in motivating cross-border acquisitions. In analysing Norwegian plant-level data, Balsvik and Haller (2010) argue that foreign owners tend to acquire domestic firms in order to obtain efficiency gains from synergies associated to the existence of complementary resources between MNEs and local companies. The relevance of assets matching as a triggering factor for cross-border acquisitions is also corroborated by Guadalupe et al. (2012), who examine the acquisition decisions of MNEs for a sample of Spanish firms. In investigating the relationship between foreign ownership and innovative capacity of newly acquired companies, they argue that incentives for acquisitions and innovation are strongly interdependent and, as a consequence, a positive selection in acquisition choices occurs whenever there is a complementarity between target firms' productivity and the amount of innovation. In other words, target firms' productive assets complement MNEs investment in innovation upon acquisition and this conducts to the takeover of most productive domestic firms within industries. Analogously, Blonigen et al. (2014) inspect the dynamics of cross-border acquisitions on a panel of French firms focussing on the synergic role played by the capacity of companies to generate export networks and time-changing productivity levels of these domestic actors. Their empirical analysis suggests that valuable assets sought by MNEs pertain to the antecedent capability of French firms to form export linkages, which is positively dependent on high initial productivity. Nonetheless, acquisitions are actually found to occur mostly when firms are afflicted by a negative productivity shock, which generates a depressing effect on the price of the same assets. On the other hand, assets complementarity does not emerge as a compelling factor to explain international acquisitions in Díez and Spearot (2014). In fact, in testing

whether assortative matching acts as a meaningful driver of cross-border takeovers, these authors do not observe the occurrence of this feature in the data.

4.2.2 Acquisitions to access foreign markets

Cross-border acquisitions can also be motivated by profitability considerations made by MNEs as a way to increase their market power, reduce the competitive pressure within industries and attain a larger market share. For instance, the limited availability of firm-specific ownership advantages, such as a superior technology, pushes firms to merge in an oligopolistic market (Horn and Persson, 2001). In this framework, low trade costs encourage cross-border acquisitions since firms can access new foreign markets, while high trade costs intensify domestic mergers due to reduced home competition. In a similar vein, Bjorvatn (2004) argue that economic integration increases market competition, thereby reducing the profit and reservation price of target firms. This, in turn, would raise the gains associated to international acquisition activity. Evidence in favour of the positive effect of decreasing trade costs on cross-border acquisitions is provided by Coeurdacier et al. (2009), as well as by Breinlich (2008), both emphasising the role of mergers and acquisitions in the process of industrial restructuring following economic integration. The incentives to engage in cross-border mergers in an oligopolistic context are also magnified by the existence of information asymmetries, which encourage uninformed foreign MNEs to acquire domestic firms with detailed knowledge about demand in the local market (Qiu and Zhou, 2006). Market power considerations as drivers of international acquisitions emerge in Neary (2007), where trade liberalisation is conducive to cross-border merger waves. In fact, with increased economic integration more efficient firms tend to acquire foreign less efficient rivals, thus facilitating specialisation according to

countries' comparative advantage. In this respect, Brakman et al. (2013) and Feliciano and Lipsey (2015) provide evidence that cross-border acquisition activity is more concentrated in sectors that are characterised by a revealed comparative advantage in the country of the acquirer.

Although market power considerations and profitability are posited to be noteworthy aspects spurring cross-border acquisition activity, empirical tests employing firm-level data are scarce. Early attempts in this direction come from the industrial organisation literature on domestic mergers, where the probability of target companies of being acquired depends upon their level of profitability among other factors (e.g. Harris et al., 1982; Ravenscraft and Scherer, 1989). The present study also aims at testing the relevance of domestic firm profitability in shaping the patterns of selection associated to cross-border takeovers.

4.2.3 Hypotheses development

Considering all the above, this paper posits that MNE acquisition choices can be driven by two fundamental and interconnected factors: target firm productivity and profitability. In this respect, the empirical part of the present paper aims at testing the following hypotheses.

Productivity hypothesis: MNEs acquire domestic firms that exhibit larger positive variation in productivity over time, as a strategy to access valuable and complementary assets.

Profitability hypothesis: MNE acquire domestic firms that exhibit a larger positive variation in profitability over time, as a strategy to access new market opportunities and expand their business activities.

Not surprisingly, firm productivity and profitability can be interconnected as more productive firms are more likely to experience thriving business conditions. Also, firms that experience more profitable business can increse their productivity as a result of economies of scale. In the empirical section of the paper, we aim at testing the above

hypotheses bearing in mind that these two firm characteristics are strongly related from a conceptual point of view.

4.3 Data

4.3.1 Dataset construction

Our sample of European companies is drawn from Bureau van Dijk cross-country and longitudinal databases Orbis and Zephyr. Orbis provides firm-level information on accounting and financial items of companies worldwide from which we construct our measures of profitability and productivity. Data on M&A operations are contained in Zephyr, which allows tracking time varying ownership information of firms. The two datasets can be easily matched via common company identifiers. Previous research employing these sources of data is well established and it includes recent works on international taxation (Voget, 2011), productivity (Maffini and Mokkas, 2011; Gal, 2013) and bank lending (Giannetti and Ongena, 2012) among others. In our empirical analysis, we consider acquisitions occurred from 1997 to 2013 in 14 European countries, that is, EU-15 countries[31] with the exception of Luxembourg, for which no relevant manufacturing firm is observed. For our purpose, a cross-border acquisition is defined as a transaction involving a foreign company acquiring a stake of a previously domestically-owned firm. Thus, the acquirer is a foreign-owned company and the target is a domestic firm. We therefore exclude from this definition certain types of operations, such as (i) wholly domestic transactions where both the acquirer and target are domestic companies; (ii) domestic firms acquiring foreign affiliates located in the acquirer country; (iii) transactions involving two foreign entities, such as a foreign

[31] These are the so-called 'Old' EU member countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal, Spain, Sweden and the UK,

affiliate acquiring another foreign affiliate in a third country (iv) operations resulting in increased stakes of ownership: the latter may include, for instance, an MNE that already owns a certain percentage of a domestic firm as a result of a previous cross-border takeover, and successively engaging in a new acquiring operation to increase its control over the domestic firm.

Also, we exclude mergers from our empirical analysis, since these transactions involves a merging of companies on a one-to-one share swap for shares in the new company[32]. Hence, while in an acquisition a firm buys and subsumes another firm, a merger represents a transaction where two or more firms decide to create a new company. Similarly, we also exclude other forms of transactions such as joint ventures, Institutional Buy-Outs (IBOs), Management Buy-Outs (MBOs) and share buyback operations. Unfortunately, not all cross-border acquisitions in Zephyr could be matched with company information in Orbis, due to different issues such as missing observations for the acquired companies in Orbis before the transactions and some missing identifiers. Other acquisitions from Zephyr, instead, could not be used in the empirical analysis because the target firms are not registered in Orbis. After carefully considering all the above, the dataset includes 458 cross-border acquisitions. Table 1 reports the number of cross-border acquisitions and the number of firms by country based on the discussion above. The sample consists of 306,247 firms observed at multiple points in time over the period 1997-2013, for a total of 1,177,895 observations. This results in an unbalanced panel of firms located across 14 countries. As noticed by other studies using the Orbis database (e.g. Maffini and Mokkas, 2011), the share of firms in the sample is skewed towards certain countries such as Italy, Spain and France and this depends to a large extent upon the availability of key variables across countries. As far

[32] Definition from Zephyr user guide online.

as cross-border acquisitions are concerned, the largest economies in Europe, that is, Germany, France, Italy and the UK, account for almost 69% of the total number of transactions. Including Spain in this group raises this percentage to about 79%.

A restricted sample is generated encompassing only those firms that are acquired by an MNE over the years 1997-2013. In other words, domestic companies that are never acquired in the sample period are excluded from this second dataset. The sample size is then reduced to 268 firms acquired over the sample period and 759 observations. This reduction in the number of acquired domestic firms is due to the methodology adopted for the construction of variables, as explained in the next section.

[Table 1 here]

4.3.2 Variables construction

In order to test our hypotheses relative to the two different drivers of cross-border acquisitions, two proxy variables for productivity and profitability of domestic firms are required. We follow the financial literature in defining the profitability of firms as the ratio between earnings before interest and taxes (EBIT) and fixed assets (Dewenter and Malatesta, 2001; Campa and Kedia, 2002; Cornett et al., 2008). EBIT is calculated in Orbis as the difference between gross profit of a firm, the total cost of goods sold and other operating expenses. Since EBIT is calculated before taxes and interest expenses, it provides a good measure of the ability of companies to make profits. As mentioned, EBIT is divided by fixed assets as a measure of firm total capital. Finally, the variable is normalised by its industry mean and logged, as follows:

$$profitability_{it-1} = ln \frac{\left(\frac{ebit}{assets}\right)_{it-1}}{\frac{1}{N}\sum_{s=1}^{n}\left(\frac{ebit}{assets}\right)_{st-1}} \quad (1)$$

where i denotes the firm, t stands for time and s indicates the NACE 4-digits manufacturing sector[33]. Industry means are only calculated by year and sector in this measure, even if they could be also computed by country. For instance, a domestic firm in a specific country can be acquired because it is particularly profitable in its home country. However, considering the high level of economic integration of EU countries and the tight trade linkages across Europe, our preferred measure of profitability is normalised on a wider industry mean than the country level. Nonetheless, results are checked against alternative measures of profitability, also taking into account such a national dimension, are contemplated. First, the effects of depreciation and amortization of assets are excluded from firm earnings by substituting EBIT with a measure of earnings before interest, taxes, depreciation and amortization (EBITDA). The latter can be relevant for capital-intensive firms and sectors where the depreciation of capital can strongly depress earnings as measured by EBIT. Second, two additional measures of profitability are generated by replicating EBIT- and EBITDA-based variables normalised on industry means calculated by individual country for the reasons discussed above.

As far as labour productivity is concerned, following to Guadalupe et al. (2012), this is intended as the ratio between value added and employment, normalised by industry mean, as follows:

[33] The sample includes 292 different NACE 4-digits manufacturing sectors.

$$labour\ productivity_{it-1} = ln \frac{\left(\frac{value\ added}{employment}\right)_{it-1}}{\frac{1}{N}\sum_{s=1}^{n}\left(\frac{value\ added}{employment}\right)_{st-1}} \quad (2)$$

where i denotes the firm, t stands for time and s indicates the NACE 4-digits manufacturing sector. A different proxy for labour productivity is also computed by replacing value added with turnover. Furthermore, as in the case of profitability, the two measures of labour productivity are re-computed on industry means by country.

Although TFP may be a better proxy for firm productivity than labour productivity, the calculation of TFP in Orbis is likely to lower the number of observations and potentially decrease the number of cross-border acquisitions that could be used in the empirical analysis, due to the high requirements for TFP calculation in terms of data. Furthermore, the decrease in the number of firms may be biased towards companies that provide a wider range of data, and that are plausibly larger and more productive than others[34]. Regardless of these potential limitations, however, we test the robustness of our results also with respect to two TFP measures. Table 2 provides the correlation matrix between the various measures of profitability and labour productivity described in this section (panel A). Interestingly, profitability and labour productivity do not exhibit high correlation coefficients. In particular, the correlation between our preferred measures (PR1 and LP1) is only 0.13. Panel B of Table 2 provides the correlation coefficient between profitability and labour productivity in the dataset restricted to domestic companies that are acquired at some point during the sample period.

[34] Gal (2013) shows a very high correlation between TFP and labour productivity (calculated as value added-employment ratio) using Orbis data.

Finally, we consider employment and fixed assets as control variables for firm size and capital availability[35]. Summary statistics are described in Table 3. Interestingly, the mean values of both profitability and labour productivity are higher in the restricted sample than in the full sample. Considering that the former only includes domestic firms that are acquired by an MNE at a certain time over the sample period, such a difference in mean values may be suggestive of the fact that firms that are going to become foreign affiliates tend to be more profitable and productive than the others. Similarly, these firms also tend to be larger as well as having larger capital endowments.

[Table 2 and 3 here]

4.4 Empirical strategy

In this section we introduce the empirical setting adopted to evaluate the relevance of the two main hypothesised factors motivating cross-border acquisitions, that is, the search for productive assets and market considerations. By employing different measures for labour productivity and firm profitability, we model the selection decision of MNEs as the linear probability that domestic firms can be acquired at any time during the sample period. Covariates are included with a one-year lag in order to avoid that target characteristics are influenced by foreign ownership. In this respect, Fich et al. (2011) argue that an M&A negotiation period typically lasts between 31 and 163 days from the initiation date. Furthermore, also previous empirical contributions adopt a single year lag to model acquisition decisions (e.g. Guadalupe et al., 2012; Blonigen et al., 2014).

[35] Similar to profitability and labour productivity, these control variables are normalised by yearly industry means and take a logarithmic form: $X_{it-1} = ln\frac{(x)_{it-1}}{\frac{1}{N}\sum_{s=1}^{n}(x)_{st-1}}$.

Thus, the probability y that a domestic firm i operating in industry s is acquired in a given year t is estimated as:

$$y_{it} = \beta PR_{it-1} + \gamma LP_{it-1} + \vartheta X_{it-1} + \delta_t + \lambda_{st} + \omega_{ct} + \varphi_i + u_{it} \quad (3)$$

where *PR* stands for firm profitability, *LP* indicates labour productivity, *X* is a vector of time-varying firm-level controls, δ is a set of time dummies, λ includes industry trends, ω represents a set of country-year dummy variables, φ incorporates firm fixed effects and u is an idiosyncratic error term. Although the only control variables included in *X* are firm lagged employment and fixed assets, we are confident that incorporating fixed effects at the firm-level will account for any independent, target-specific and time invariant acquisition determinant that is omitted in the model. These, for instance, can include managerial quality and practices, company structure, reputation effects and all sorts of unobserved time-constant factors operating within the firm that can attract takeovers or can be correlated with the capacity to generate earnings or employing assets efficiently.

We also control for specific influences that can affect cross-border acquisition decisions across years by including time dummies. In fact, it is well documented that aggregate M&A occur in waves (Andrade et al., 2001) and such a cyclical nature of corporate business can affect the probability of firms to be acquired in a given year. Moreover, waves of mergers tend to be clustered within industries as a result of the exposure of firms to technological, regulatory and economic shocks that alter the structure of specific industries (Mitchell and Mulherin, 1996). Hence, industry trends are included in our empirical model to account for any time variant industry-specific disturbance that can affect domestic firms' characteristics as well as the strategic decision of MNEs to incur in a cross-border takeover and select a specific target. A third important

dimension of the non-uniform distribution of acquisitions controlled for is the geographical dimension. In fact, the clustering of acquisitions in specific countries is striking in our data, as evidenced in Table 1. Although firm fixed effects include the location of targets and we do not have data on firms that move in space across time, we generate a set of country-year dummies that allow controlling for the concentration of cross-border takeovers in specific destinations over time. The relevance of national boundaries and geography for the occurrence of international acquisitions tends to be associated with the performance of national stock markets, which are more likely to affect a country as a whole rather than a specific industry (Erel et al., 2012).

With respect to existing empirical strategies modelling the selection decisions of MNEs, we combine the above-mentioned aspects in a novel way. For instance, while accounting for industry trends and time fixed effects, Guadalupe et al. (2012) explore within-industry differences in probability of international acquisitions, not controlling for fixed effects operating at the level of individual firms in their linear probability specification. Blonigen et al. (2014) extend their baseline logit analysis to include firm and time fixed effects using a sample that only includes acquired foreign affiliates. As evidenced in the equation to be estimated presented above, instead, our empirical strategy combines firm and time fixed effects with industry trends in a linear specification, employing both a full dataset including acquired firms as well as those that are never acquired, and a restricted dataset only containing companies that are acquired at some point over the sample period. In addition, considering that the present study focuses on a set of countries rather than a single country, we also incorporate a term capturing waves of acquisitions that cluster within national economies. In so doing, we investigate the relevance of within-firm variation in profitability and labour productivity in affecting the selection decisions of MNEs that engage in cross-border takeovers.

4.5 Results

This section is structured in six parts, each coinciding to a different empirical approach employed to test our hypotheses regarding the selection decisions of MNEs in cross-border takeovers. First, the baseline analysis concentrates on the relevance of lagged profitability and labour productivity in driving the choices of MNEs towards certain target firms rather than others. Second, we scrutinize alternative specifications of the baseline setting by introducing and testing different measures of firm profitability and labour productivity. Third, we explore the potential non-linearity of the selection decision of MNEs as far as the interaction between profitability and labour productivity is concerned. Fourth, we compare target profitability and labour productivity across industries characterised by different technological intensity. Fifth, we adopt a more stringent definition of cross-border takeovers by re-estimating the linear probability model on acquisitions of majority stakes as well as completed takeovers. Finally, we assess the relevance of target characteristics by restricting the sample to include only domestic firms that are acquired at some point over the sample period.

4.5.1 Probability of foreign acquisition: baseline estimates

The baseline results for the estimation of the linear probability equation are provided in Table 4. In columns (1) and (2), lagged measures of firm profitability and labour productivity are entered in isolation.

[Table 4 here]

This preliminary evidence suggests that, conditional on being domestically-owned before acquisition, a target firm's higher ability to exploit market opportunities and make profits matter for the selection

decisions of MNEs. On the other hand labour productivity does not appear to be a relevant driver of acquisition decisions, suggesting that takeovers in Europe are not associated with the search for valuable productive assets. The lack of significance on labour productivity could be due to the fact that other controls for firm size and fixed capital are not included. Hence, in columns (3) and (4), covariates for employment and fixed assets are added, with our variables of interest still kept separate. Results do not vary in terms of statistical significance as compared to the previous specifications, supporting the hypothesis that cross-border takeovers are more inspired by market considerations. By contrast, there is no supporting evidence for selection decisions based on within-firm changes in productivity. A concern on the validity of these results may arise by entering both profitability and labour productivity in the same specification, as their effects and significance could deviate from specifications where they are separately estimated. Therefore, we test this by running estimations reported in columns (5) and (6), which incorporate firm profitability and labour productivity in the same model. Analogously to previous estimates, results remain stable suggesting that MNEs tend to select more profitable domestic firms. As evidenced by results in columns (1) to (4), the statistical insignificance of the coefficient on firm labour productivity as a determinant of cross-border takeovers in columns (5) and (6) cannot be associated with the simultaneous inclusion of the profitability measure. Moreover, while it could be argued that firm profitability captures an effect similar to that of labour productivity, we have shown in the data section that their correlation coefficient is particularly modest in magnitude. We consider the coefficient on profitability in column (6) as our preferred baseline estimate since this is our most extended specification. This denotes that firms experiencing a one percentage point increase in profitability have a probability of 0.038% of being acquired or, equivalently, a one standard deviation increase in lagged profitability is on average associated with a

0.8% higher probability of being acquired by a foreign MNE in any given year. This latter figure should be interpreted bearing in mind that only 0.15% of firms are acquired in our full sample, as shown by the numbers reported in Table 1. Hence, the magnitude of the effect appears to be nontrivial.

These baseline results tend to corroborate the notion that MNEs select domestic companies that exhibit notable within-firm changes in profitability, after potential waves of cross-border takeovers as well as trends of corporate activity in specific industries and countries are controlled for. This implies that domestic firms experiencing above-average increases in their profitability are targeted by MNEs in the following year. This provides some preliminary support to the hypothesis that cross-border acquisitions are associated with a market entry rationale, according to which MNEs aim at securing a solid position in foreign locations through the acquisition of a profitable domestic company in order to access new or larger market opportunities.

As it is mentioned above, a one year lag in the measures of profitability and labour productivity appears reasonable according to the evidence on the typical negotiation time required for acquisitions (Fich et al., 2011). To a closer inspection this circumstance is also corroborated by our data: indeed, by exploiting time information about acquisitions, we find that 90% of transactions in our sample are rumoured or announced in the same calendar year in which they are eventually completed. This figure increases to 98% when also including acquisitions that are rumoured or announced in a specific calendar year and they are successfully completed in the following year. Therefore, in terms of timing, cross-border takeover decisions appear to be based in most cases on a relatively quick assessment of target firms that have recently experienced a profitability boost. Conceptually, this common occurrence could be considered as reasonable when cross-border acquisitions are associated to a market access rationale: indeed, MNEs in search of new

or wider market opportunities plausibly tend to assess targets on their more recent observable market performance and linkages. Also, the high speed of the selection decision could be also underpinned by considerations in terms of price: that is, firms with growing businesses can become more costly in time.

4.5.2 Evidence from alternative measures of profitability and productivity

In the previous section we have explored how firm profitability and labour productivity affect international acquisitions by employing the operational definitions reported in equations (1) and (2). A concern could be that our baseline results will change with different definitions of these measures. For instance, in considering EBIT we are incorporating amortisation and depreciation costs in our profitability measure. Similarly, in normalising our measures by yearly industry means we are not accounting for the relative important role that specific firms can play in their industry within their national boundaries. To accommodate these and other aspects, this section offers an analysis of cross-border takeovers by employing alternative measures of profitability and labour productivity constructed as explained in section 3.2.

Table 5 reports the linear probability estimation results on the full sample of domestic firms by adopting these new measures. In Panel A, we alternate different proxies of labour productivity, while firm profitability enters the model as specified in equation (1). Similarly, Panel B includes labour productivity as constructed in equation (2) combined with alternative proxy variables for firm profitability. All specifications include covariates for firm size in terms of employment and fixed assets as well as a full set of year dummies, industry trends, country-year dummies and time invariant firm effects. In this respect, estimated

coefficients in Table 5 are directly comparable with our baseline estimates.

[Table 5 here]

Results in Panel A support the idea that selection decisions of MNEs are associated with the search for domestic firms with a strong ability to make successful business. This result remains stable across specifications when different measures of labour productivity are employed. The latter, similarly to the baseline results, does not exhibit statistically significant coefficients in columns (1) to (3) regardless of the way in which the measure is constructed. As matter of fact, substituting firm value added with turnover as well as fragmenting yearly industry means by country constantly provides the same non-significant estimates on labour productivity. In a similar vein, Panel B reports estimation results that corroborate further the hypothesis that cross-border acquisitions are influenced by the increasing success of domestic firm boost in profitability, while MNEs do not seem to be sensitive to the opportunity to access the productive assets of potential target companies, *ceteris paribus*. The statistical relevance of firm profitability is also robust to different operational definitions as suggested by columns (4) to (6), where the significance level is maintained between 1% and 5%.

Interestingly, the magnitude of the effect is similar to that in our baseline estimates, with the exception of EBITDA-based measures of profitability, which exhibit a stronger effect. This may reasonably suggest that depreciation and amortisation truly depress firm earnings when they are not excluded from the definition of profitability.

A further concern with respect to these results can be related to the inclusion of labour productivity as a proxy for domestic firms' valuable productive assets instead of TFP. In fact, while labour productivity tends to capture the incidence and relevance of the workforce in transforming

inputs into output, it misses by definition the role played by other factors of production. At the same time, it is possible that firm profitability captures within-firm variation in TFP, and this would explain the constantly significant coefficients associated with different measures of firm profitability. In a nutshell, excluding TFP could simultaneously explain the statistical relevance of firm profitability and the insignificance of labour productivity. Our empirical model described by equation (3) in Section 4 can be easily modified to accommodate the inclusion of a measure of TFP. Therefore, two simple measures of production function-based TFP are generated by exploiting Orbis data and following Gal (2013). By exploiting information on firm value added, employment and tangible fixed assets, firm TFP is estimated as the residual of both simple OLS and fixed effects estimations at the firm level. Hence, we normalise these two measures of TFP by yearly industry means at the 4-digits industry level and we lag them. We eventually obtain two variables of TFP with a similar structure to our measures of profitability and labour productivity. The correlation coefficient between the two measures of TFP is 0.35, suggesting that the portion of time invariant productivity is large. This is also evident by comparing the correlation between the two measures of TFP and labour productivity, as described in equation (2). The coefficient stands at 0.85 in the case of OLS residual TFP, while it decreases to 0.31 when labour productivity is compared to the fixed effects TFP. With respect to the potential issue that profitability may capture some TFP-type effect, this should not constitute a concern in our data given that the correlation between OLS residual TFP and profitability, the latter defined in equation (1), is only 0.32 and it falls to 0.08 when considering fixed effects TFP.

[Table 6 here]

In Table 6, the linear probability model detailed in equation (3) is estimated by substituting labour productivity with TFP to check the robustness of our previous results to the inclusion of such a variable. A first observation should be made with respect to the number of firms that enter the regression, which falls from 306,247 to 213,776, further justifying the adoption of labour productivity in the first place to study a larger sample and to avoid selection issues. Similarly to Table 4, columns (1) and (2) first report the results for productivity in isolation. Neither version of TFP yields statistical significant coefficients, in line with the estimates of labour productivity. Columns (3) and (4) instead reflect previous results, with a notable role played by domestic firms' market linkages in shaping the selection decisions of MNEs that engage in cross-border takeovers. Therefore, the pattern illustrated in the baseline is further supported, and concerns associated with our preferred measures of profitability and productivity should be, at least, mitigated by the tests performed in this section.

4.5.3 Non-linearity in within-firm probability of foreign acquisition

While previous sections presented baseline results and their robustness to model specification with alternative measures of profitability and labour productivity, this part will investigate whether the probability of foreign acquisition that each domestic firm faces in any given year can be considered as a non-linear function of its valuable productive assets and its capacity to run profitable businesses. The notion that higher productive efficiency corresponds to thriving market performance is well established (Foster et al., 2008). Therefore, this may reasonably suggest that the probability of foreign acquisition associated with the market access rationale underlined by our previous results could be particularly marked in the presence of more productive

domestic firms. In other words, more productive domestic companies can be those that reasonably experience a more substantial positive within-firm expansion in profits as compared to previous years. In this respect, firm productivity is conceptually seen as a determinant of cross-border acquisitions that discriminates between potential targets rather than indicating when a domestic company is acquired. This is in line with the empirical evidence produced in Guadalupe et al. (2012), who maintain that MNEs cherry-pick more productive firms within industries[36]. In our setting, this could explain the non-significant coefficient emerging from within-firm variation in productivity and, at the same time, the relevant role played by thriving firm profitability. Therefore, from an empirical point of view, we augment the probability model in equation (3) by entering an interaction term between firm profitability and labour productivity in order to delve into the potential interplay between these two firm characteristics in shaping the selection decisions of MNEs. Results of this estimation are reported in column (1) of Table 7, which shows that the effects of firm profitability and labour productivity do not vary as compared to previous results. Interestingly, the interaction term yields a positive and significant coefficient, as hypothesised. Within-firm differences in the probability of being acquired also depend upon the level of firm productivity, conditional on being domestically-owned before the takeover.

[Table 7 here]

To further examine this aspect, we break our sample down at median values of firm profitability and labour productivity. In so doing, we are able to estimate the probability of being acquired as a function of within-

[36] By contrast, the study of within-firm differences in the probability of being acquired by a MNE in Blonigen et al. (2014) suggests that the occurrence of negative shocks in firm productivity encourages takeovers as it lowers the price.

firm variation in profitability using specific sub-samples of high- (low-) productive domestic companies. Similarly, we test the differential relevance of firm productivity in shaping foreign acquisition decisions on sub-samples of high- (low-) profitability enterprises.

Estimates are presented in columns (2) to (5) of Table 7. The concentration of the statistically significant effect of profitability in the sub-sample of domestic firms exhibiting a level of labour productivity above the median in column (2) supports the idea that more productive domestic companies tend to experience positive within-firm variations in their profitability that make them systematically more appealing for takeovers than the rest of potential targets. In this sub-sample of domestic firms, a one standard deviation increase in lagged profitability corresponds to a 1.4% higher probability of being acquired by a foreign MNE in any given year[37], which is a larger effect than the one retrieved in our baseline estimates. As expected, the same does not occur in column (4) when we analyse within-firm changes in labour productivity in the segment of high profitability companies. As mentioned, these results corroborate the hypothesis that a notable portion of the profitability effect tends to be concentrated among more efficient firms, as these may plausibly be those that easily experience a reinforcement of their businesses over time.

4.5.4 Foreign acquisitions and technology

The profitability effect emerged in previous results may also be associated with the technological intensity of specific industries. We employ the Eurostat aggregations of manufacturing sectors by technological intensity based on NACE Rev.2 in order to identify industries characterised by different levels of technology. In so doing, we are able to group firms into high-medium technology and medium-low

[37] The standard deviation of lagged profitability in this sub-sample is equal to 2.0463.

technology sectors. In particular, the former category encompasses 68,477 firms grouped in 92 4-digit industries while the latter contains 237,770 companies in 200 4-digit industries. The number of cross-border takeovers is similar across the two segments of firms, with 227 acquisitions occurring in high-medium technology sectors and 231 in medium-low technology industries. The profitability effect on the probability of being acquired by a MNE can plausibly be associated with sectors that are characterised by a higher technological intensity as these industries could require higher costs of entry and investment in R&D (Narula and Hagedoorn, 1999). Therefore, limited competition in these sectors could be conducive of stronger increases in firm profitability over time. The lower number of firms in high-medium technology sectors in our data seems to point in this direction. Interestingly, firm average size in terms of employment of firms in high-medium technology industries is 179 employees in our sample, whilst the same dimension decreases to 61 employees when considering medium-low technology sectors. Thus, domestic firms operating in segments of the economy where the technological content is higher are considerably larger in size. This can produce additional barriers to entry due to strong economies of scale in these industries, especially in presence of transport costs and non-homogeneous goods.

In Table 8, we estimate the probability of being acquired by differentiating between high-medium technology and medium-low-technology sectors. Columns (1) and (2) report results for the baseline model while columns (3) and (4) include the interaction term between firm profitability and labour productivity. The effect of profitability tend to be concentrated in high-medium technology sectors, as anticipated, while cross-border acquisitions in medium-low technology industries are not responsive to this aspect. The coefficient in column (1) suggests that a one standard deviation increase in firm profitability corresponds to a 2.5% higher chance of switching to foreign ownership in the following

year, conditional of being previously domestically-owned[38]. The effect of profitability holds when the interaction enters the specification. The latter is surprisingly non-significant when examining takeovers in high-medium technology sectors, while it becomes weakly relevant in the sub-sample of medium-low technology industries. This may indicate that the (weak) effect of profitability in these sectors is present only for the most productive firms experiencing a positive variation in earnings.

[Table 8 here]

4.5.5 Completed and majority foreign acquisitions

This section is aimed at testing the robustness of our previous results with respect to changes in the dependent variable. The measure of time varying foreign ownership employed so far, in fact, contains different types of cross-border takeover. The first difference relates to acquisitions of majority and minority stakes of the target firm. In fact, different organisational strategies by MNEs can lead to the decision to engage into cross-border takeovers according to different degrees of control of foreign assets. The second difference is associated with the completion of a deal as opposed to acquisitions that are only announced or rumoured.

[Table 9 here]

Table 9 provides evidence considering these different aspects. In columns (1) and (2), we consider a measure of majority acquisitions, defined as transactions resulting in a total share of foreign ownership that is equal or larger than 50%. As a result, the total number of acquisitions decreases to 420 from the initial 458. This limited decrease in the number of cross-border takeovers is not due to the fact that MNEs

[38] The standard deviation in this subsample is 1.9983.

immediately acquire a large ownership share of targets. Actually, acquisitions of more limited shares are frequent in our sample. However, most of these are followed by further transactions in the same calendar year by the same MNE aimed at increasing its stake of ownership. In these cases, we consider only the last operation of acquisition, often resulting in a majority takeover. By contrast, when more operations between the same acquirer and target span over different calendar years, we consider the first operation only. Columns (3) and (4), instead, report estimation results for completed operations. As mentioned, some acquisitions are only announced or rumoured, whereas completed acquisitions amount to 416 transactions. Finally, in columns (5) and (6), we simultaneously combine information on majority and completed operations, thus obtaining 387 cross-border acquisitions. Results continue to support the notion that takeovers are associated with market access considerations via domestic firms experiencing thriving business conditions. Furthermore, similarly to previous results, columns (2), (4) and (6) report that this effect is also mediated by firm productivity: that is, when a domestic company is more efficient, within-firm expansion in profitability tends to be associated with a higher chance of being acquired in a given year. The magnitude of the estimated coefficients is also in line with previous results.

4.5.6 Evidence from acquisition targets only

In the previous sections, we employed a full sample containing both firms that are acquired at some point over the period 1997-2013 and firms that remain domestically-owned over the whole time span. By contrast, in this part the sample is restricted to domestic firms that are acquired by foreign MNEs in a certain year, similarly to the empirical strategy of Blonigen et al. (2014). Therefore, we test whether within-firm variation in profitability and productivity also explain differences in the

probability of foreign acquisition in the group of targeted domestic companies. This empirical approach can also be informative of the timing of foreign takeovers, considering that all firms in the sample are acquired by the end of the sample period.

[Table 10 here]

Table 10 presents the estimation results based on data on 268 firms acquired over the period. We lose some of the acquisitions as compared to the full sample due the generation of new variables for firm profitability, productivity and other characteristics as well as yearly industry means. Results still support the idea that MNEs that engage in cross-border takeovers select domestic firms experiencing a boost in their business performance in the form of higher profitability, while firm productivity does not play a relevant role. The significance level of the coefficients on firm profitability, however, ranges between 5% and 10%. Furthermore, we do not detect any significant interaction effect between firm profitability and productivity. These differences are probably due to a more limited within-firm variation in profitability and productivity in the sample restricted to acquisition targets only, as compared to the full sample. Overall, however, results in Table 10 still support the baseline estimates as well as the hypothesis in favour of market access considerations as the fundamental element that informs the selection decisions of MNEs engaging in acquisitions across borders.

4.6 Conclusions

The relevance of M&A over other forms of FDI has notably grown in the last decades. This is particularly the case of FDI in advanced economies, where the acquisition of pre-existing domestic firms is the preferential strategy of entry of MNEs. In spite of this, academic research

trying to understand the selection decisions of MNEs that engage in cross-border takeovers has lagged behind, in part as a result of lack of information on changes in the ownership structure of companies. Therefore, shedding light on the systematic patterns of selection that characterise the choices of international acquirers has become particularly urgent in both academic and policy terms. In fact, with few recent exceptions, existing econometric studies only focus on industry-wide or country-wide determinants of acquisitions and the micro-level drivers of this important form of FDI remain underscored. This lack of quantitative empirical evidence on a central feature of current globalisation (i.e. cross-border acquisitions) represents an important motivation developing the present chapter.

In this paper we have hypothesised that while the productivity mechanism suggested by the literature can be a relevant driver of acquisitions, market access considerations could be analogously important in shaping the behaviour of MNEs. In fact, corporate strategies can be also aimed at securing a position of strength in a foreign market via the acquisition of a domestic firm experiencing thriving business performance. By employing data on European firms in EU 'old' member countries, we found strong evidence in favour of this second hypothesis, while productivity motives for acquisition do not find any support in our sample. This finding appears especially meaningful considering that EU-15 countries are notoriously associated with inflows of FDI aimed at accessing the large European market (Head and Mayer, 2004). Our results are robust to different measurements of productivity and firm profitability. Furthermore, our findings suggest that the effect of positive within-firm variation in business conditions tends to be concentrated among more productive firms, providing some support for the notion that MNEs acquire more efficient firms that are capable to increase the profitability of their business operations. As expected, the relevance of the time varying capacity of firm to make profits is concentrated in

industries characterised by higher technological intensity. This is possibly due to the higher barriers to entry and the presence of scale economies in these sectors. Our findings are also robust to different definitions of foreign ownership, including the acquisition of majority stakes and the inclusion of completed transactions only. Finally, our main results also hold when reducing the sample to include only those firms that switch from domestic to foreign ownership during the sample period. It is important to notice, however, that within-industry differences in MNE performance can be associated with different propensity and ability to accumulate knowledge, invest in R&D as well as managerial capability (Castellani and Zanfei, 2006; Castellani and Giovannetti, 2010). Therefore, selection in the acquisition strategies of MNEs could be related to some extent to MNE diversity in these underlying characteristics. While the present study is limited in this respect, this can be considered a valuable line for future research on the selection patterns of cross-border takeovers. Moreover, data limitation does not allow measuring strategic assets of target firms in a neat manner, but several measures for productivity are employed. A further limitation is associated with the existence of explanations of international acquisitions not directly tested in this chapter. For instance, MNEs from emerging countries increasingly adopt knowledge augmenting strategies by acquiring companies in developed countries (Luo and Tung, 2007). Our data does not allow identifying a sufficient number of transactions undertaken by this type of MNE and therefore this analysis cannot be adequately developed from an econometric standpoint.

In a policy perspective, this paper's findings can be considered to delineate measures to support industrial restructuring in the EU as a strategy of firms to maintain or increase their competitiveness. However, policy makers should also be concerned with the risks associated to large waves of M&A in terms of a reduction of market competition through the

acquisition activity of MNE, thus taking into account a reinforcement of antitrust policies.

Table 4.1: Firms and acquisitions by country, 1997-2013

Country	(1) Observations	(2) Firms	(3) %	(4) Acquisitions	(5) %
		A. Full sample			
Austria	3,345	1,300	*0.42*	6	*1.31*
Belgium	15,245	3,254	*1.06*	35	*7.64*
Denmark	253	42	*0.01*	0	*0.00*
France	129,674	38,050	*12.42*	63	*13.76*
Finland	23,273	6,672	*2.18*	17	*3.71*
Germany	68,970	23,013	*7.51*	79	*17.25*
Greece	18	8	*0.00*	0	*0.00*
Italy	325,555	91,964	*30.03*	93	*20.31*
Ireland	1,407	490	*0.16*	2	*0.44*
Netherlands	1,063	320	*0.10*	2	*0.44*
Portugal	79,640	24,556	*8.02*	6	*1.31*
Spain	419,717	90,231	*29.46*	49	*10.70*
Sweden	70,720	15,958	*5.21*	28	*6.11*
United Kingdom	39,015	10,389	*3.39*	78	*17.03*
Total	1,177,895	306,247	*100.00*	458	*100.00*
		B. Restricted sample			
Austria	11	3	*1.12*	3	*1.12*
Belgium	48	22	*8.21*	22	*8.21*
Denmark	0	0	*0.00*	0	*0.00*
France	69	25	*9.33*	25	*9.33*
Finland	25	10	*3.73*	10	*3.73*
Germany	109	44	*16.42*	44	*16.42*
Greece	0	0	*0.00*	0	*0.00*
Italy	171	59	*22.01*	59	*22.01*
Ireland	0	0	*0.00*	0	*0.00*
Netherlands	6	2	*0.75*	2	*0.75*
Portugal	1	1	*0.37*	1	*0.37*
Spain	107	34	*12.69*	34	*12.69*
Sweden	68	19	*7.09*	19	*7.09*
United Kingdom	144	49	*18.28*	49	*18.28*
Total	759	268	*100.00*	268	*100.00*

Notes: A) Columns 1, 2, and 3 are based on Orbis data, while columns 4 and 5 are based on Zephyr.

Table 4.2: Correlation between measures of profitability and labour productivity

	PR1	PR2	PR3	PR4	LP1	LP2	LP3	LP4	EM	AS
Full sample										
ln (ebit/assets) $_{t-1}$ (PR1)	1									
ln (ebitda/assets) $_{t-1}$ (PR2)	0.89	1								
ln (ebit/assets) by country $_{t-1}$ (PR3)	0.72	0.66	1							
ln (ebitda/assets) by country $_{t-1}$ (PR4)	0.66	0.72	0.90	1						
ln (value added/empl.) $_{t-1}$ (LP1)	0.13	0.12	0.08	0.07	1					
ln (turnover/empl.) $_{t-1}$ (LP2)	0.13	0.12	0.08	0.07	0.73	1				
ln (value added/empl.) by country $_{t-1}$ (LP3)	0.10	0.09	0.12	0.11	0.83	0.58	1			
ln (turnover/empl.) by country $_{t-1}$ (LP4)	0.11	0.10	0.13	0.11	0.62	0.82	0.70	1		
ln employment$_{t-1}$ (EM)	-0.04	-0.04	-0.11	-0.11	0.15	0.13	0.04	0.01	1	
ln assets$_{t-1}$ (AS)	-0.31	-0.34	-0.37	-0.39	0.38	0.34	0.28	0.22	0.75	1
Restricted sample										
ln (value added/empl.) $_{t-1}$ (LP1)	0.29									

Notes: PR stands for profitability and LP stands for labour productivity. All variables are normalised by industry mean as explained in the relative section.

Table 4.3: Descriptive statistics

	Obs	Mean	Std. Dev.	Obs	Mean	Std. Dev.
	Full sample			*Restricted sample*		
ln (ebit/assets) $_{t-1}$	1177895	-1.899	2.078	759	-0.2647	1.1888
ln (ebitda/assets) $_{t-1}$	1124238	-1.372	1.638			
ln (ebit/assets) by country $_{t-1}$	1002614	-1.327	1.989			
ln (ebitda/assets) by country $_{t-1}$	1037000	-0.953	1.614			
ln (value added/empl.) $_{t-1}$	1177895	-0.161	0.663	759	-0.0273	0.4052
ln (turnover/empl.) $_{t-1}$	1149393	-0.430	0.898			
ln (value added/empl.) by country $_{t-1}$	1177084	-0.100	0.592			
ln (turnover/empl.) by country $_{t-1}$	1149392	-0.256	0.767			
ln employment $_{t-1}$	1177895	-1.109	1.482	759	-0.5768	1.3810
ln assets $_{t-1}$	1177895	-1.900	2.231	759	-0.9005	1.845

Notes: PR stands for profitability and LP stands for labour productivity. All variables are normalised by industry mean as explained in section 3.2.

Table 4.4: Probability of foreign acquisition

Dep Var: Foreign ownership	(1)	(2)	(3)	(4)	(5)	(6)
ln Profitability $_{t-1}$	0.0035***		0.0040***		0.0037**	0.0038**
	(0.0013)		(0.0015)		(0.0013)	(0.0015)
ln Labour productivity $_{t-1}$		0.0063		0.0075	0.0048	0.0045
		(0.0073)		(0.0084)	(0.0073)	(0.0084)
ln Employment $_{t-1}$			-0.0011	0.0030		0.0008
			(0.0056)	(0.0067)		(0.0067)
ln Assets $_{t-1}$			0.0033	-0.0007		0.0026
			(0.0032)	(0.0028)		(0.0032)
Observations	1,177,895	1,177,895	1,177,895	1,177,895	1,177,895	1,177,895
Clusters	306,247	306,247	306,247	306,247	306,247	306,247
R-squared	0.46	0.46	0.46	0.46	0.46	0.46
adj. R-squared	0.26	0.26	0.26	0.26	0.26	0.26
Year FEs	Y	Y	Y	Y	Y	Y
Country-year dummies	Y	Y	Y	Y	Y	Y
Industry trends	Y	Y	Y	Y	Y	Y
Firm FEs	Y	Y	Y	Y	Y	Y

Notes: A) Firm-level clustered standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. B) All variables are normalised by industry means computed yearly at NACE 4-digits level.

Table 4.5: Alternative measures for profitability and labour productivity

Dep Var: Foreign ownership	(1)	(2)	(3)	(4)	(5)	(6)
A. Alternative measures of labour productivity						
Profitability=ln(ebit/assets) $_{t-1}$	0.0036**	0.0037**	0.0034**			
	(0.0015)	(0.0015)	(0.0015)			
Labour productivity =						
ln (turnover/empl.) $_{t-1}$	0.0037					
	(0.0066)					
ln (value added/empl.)		0.0057				
by country $_{t-1}$		(0.0085)				
ln (turnover/empl.)			0.0083			
by country $_{t-1}$			(0.0089)			
B. Alternative measures of profitability						
Labour productivity =						
ln (value added/employment) $_{t-1}$				0.0035	0.0142	0.0136
				(0.0091)	(0.0087)	(0.0085)
Profitability =						
ln (ebitda/assets) $_{t-1}$				0.0062***		
				(0.0022)		
ln (ebit/assets) by country $_{t-1}$					0.0040**	
					(0.0017)	
ln (ebitda/assets) by country $_{t-1}$						0.0051**
						(0.0020)
C. Both panels						
ln Employment $_{t-1}$	0.0009	0.0012	0.0030	-0.0006	0.0078	0.0076
	(0.0066)	(0.0066)	(0.0074)	(0.0070)	(0.0077)	(0.0074)
ln Assets $_{t-1}$	0.0028	0.0025	0.0022	0.0041	0.0027	0.0031
	(0.0031)	(0.0032)	(0.0032)	(0.0035)	(0.0036)	(0.0037)
Observations	1,149,393	1,177,084	1,149,392	1,124,238	1,002,614	1,037,000
Clusters	300,389	306,193	300,389	300,174	290,959	293,043
R-squared	0.46	0.46	0.46	0.47	0.50	0.49
adj. R-squared	0.27	0.26	0.27	0.27	0.30	0.29
Year FEs	Y	Y	Y	Y	Y	Y
Country-year dummies	Y	Y	Y	Y	Y	Y
Industry trends	Y	Y	Y	Y	Y	Y
Firm FEs	Y	Y	Y	Y	Y	Y

Notes: A) Firm-level clustered standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. B) All variables are normalised by industry means computed yearly at NACE 4-digits level. Where specified, industry means are also calculated by country.

Table 4.6: Foreign acquisitions and total factor productivity

Dep Var: Foreign ownership	(1)	(2)	(3)	(4)
ln Profitability $_{t-1}$			0.0061***	0.0059**
			(0.0023)	(0.0023)
ln TFP ols $_{t-1}$	0.0172		0.0112	
	(0.0141)		(0.0140)	
ln TFP fe $_{t-1}$		0.0237		0.0165
		(0.0152)		(0.0150)
ln Assets $_{t-1}$	0.0040	0.0030	0.0088	0.0079
	(0.0056)	(0.0054)	(0.0060)	(0.0058)
ln Employment $_{t-1}$	0.0045	-0.0008	0.0007	-0.0026
	(0.0131)	(0.0110)	(0.0130)	(0.0109)
Observations	662,910	662,910	662,910	662,910
Clusters	213,776	213,776	213,776	213,776
R-squared	0.51	0.51	0.51	0.51
adj. R-squared	0.28	0.28	0.28	0.28
Year FEs	Y	Y	Y	Y
Country-year dummies	Y	Y	Y	Y
Industry trends	Y	Y	Y	Y
Firm FEs	Y	Y	Y	Y

Notes: A) Firm-level clustered standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. B) All variables are normalised by industry means computed yearly at NACE 4-digits level.

Table 4.7: Interaction effect between firm profitability and labour productivity

Dep Var: Foreign ownership	(1) Full sample	(2) High productivity (>50%)	(3) Low productivity (<50%)	(4) High profitability (>50%)	(5) Low profitability (<50%)
ln Profitability $_{t-1}$	0.0046***	0.0070**	0.0024		
	(0.0015)	(0.0033)	(0.0027)		
ln Labour productivity $_{t-1}$	0.0105			0.0262	-8.00e-05
	(0.0075)			(0.0184)	(0.0132)
Interaction $_{t-1}$	0.0038**				
	(0.0017)				
ln Employment $_{t-1}$	0.0003	4.75e-05	-0.0178	0.0113	-0.0069
	(0.0057)	(0.0119)	(0.0148)	(0.0115)	(0.0127)
ln Assets $_{t-1}$	0.0027	0.0081	-0.0008	-0.0013	0.0012
	(0.0027)	(0.0062)	(0.0062)	(0.0054)	(0.0077)
Observations	1,177,895	502,265	503,006	502,252	503,033
Clusters	306,247	245,122	245,386	245,123	245,391
R-squared	0.46	0.67	0.71	0.65	0.72
adj. R-squared	0.26	0.35	0.44	0.31	0.45
Year FEs	Y	Y	Y	Y	Y
Country-year dummies	Y	Y	Y	Y	Y
Industry trends	Y	Y	Y	Y	Y
Firm FEs	Y	Y	Y	Y	Y

Notes: A) Firm-level clustered standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. B) All variables are normalised by industry means computed yearly at NACE 4-digits level.

Table 4.8: Probability of foreign acquisition by technological class

Dep Var: Foreign ownership	(1) High-Medium tech.	(2) Medium-Low tech.	(3) High-Medium tech.	(4) Medium-Low tech.
ln Profitability $_{t-1}$	0.0124**	0.0013	0.0141**	0.0019
	(0.0053)	(0.0013)	(0.0061)	(0.0015)
ln Labour productivity $_{t-1}$	0.0043	0.0051	0.0144	0.0101
	(0.0224)	(0.00741)	(0.0244)	(0.0073)
Interaction $_{t-1}$			0.0064	0.0032*
			(0.00610)	(0.00174)
ln Employment $_{t-1}$	0.0057	0.0009	0.0053	0.0003
	(0.0185)	(0.0057)	(0.0185)	(0.0057)
ln Assets $_{t-1}$	0.0107	0.0003	0.0111	0.0004
	(0.0093)	(0.0031)	(0.0094)	(0.0031)
Observations	272,394	905,501	272,394	905,501
Clusters	68,477	237,770	68,477	237,770
R-squared	0.43	0.48	0.43	0.48
adj. R-squared	0.23	0.30	0.23	0.30
Year FEs	Y	Y	Y	Y
Country-year dummies	Y	Y	Y	Y
Industry trends	Y	Y	Y	Y
Firm FEs	Y	Y	Y	Y

Notes: A) Firm-level clustered standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. B) All variables are normalised by industry means computed yearly at NACE 4-digits level.

Table 4.9: Completed and majority acquisitions

	(1)	(2)	(3)	(4)	(5)	(6)
Dep Var: Foreign ownership	Majority		Completed		Completed majority	
ln Profitability $_{t-1}$	0.0035**	0.0044***	0.0033**	0.0041**	0.0032**	0.0041***
	(0.0014)	(0.0017)	(0.0014)	(0.0016)	(0.0014)	(0.0016)
ln Labour productivity $_{t-1}$	0.0023	0.0092	0.0043	0.0104	0.0027	0.0092
	(0.0082)	(0.0085)	(0.0082)	(0.0084)	(0.0080)	(0.0083)
Interaction $_{t-1}$		0.0043**		0.0038**		0.0041**
		(0.0019)		(0.0018)		(0.0018)
ln Employment $_{t-1}$	0.0005	0.0001	0.0023	0.0018	0.0016	0.0010
	(0.0065)	(0.0065)	(0.0065)	(0.0065)	(0.0064)	(0.0064)
ln Assets $_{t-1}$	0.0019	0.0020	0.0017	0.0019	0.0013	0.0014
	(0.0031)	(0.0031)	(0.0031)	(0.0031)	(0.0030)	(0.0030)
Observations	1,177,895	1,177,895	1,177,895	1,177,895	1,177,895	1,177,895
Clusters	306,247	306,247	306,247	306,247	306,247	306,247
R-squared	0.46	0.46	0.46	0.46	0.46	0.46
adj. R-squared	0.27	0.27	0.27	0.27	0.27	0.27
Year FEs	Y	Y	Y	Y	Y	Y
Country-year dummies	Y	Y	Y	Y	Y	Y
Industry trends	Y	Y	Y	Y	Y	Y
Firm FEs	Y	Y	Y	Y	Y	Y

Notes: A) Firm-level clustered standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. B) All variables are normalised by industry means computed yearly at NACE 4-digits level.

Table 4.10: Restricted sample

Dep Var: Foreign ownership	(1)	(2)	(3)
ln Profitability $_{t-1}$	4.604**	3.994*	4.015*
	(2.253)	(2.312)	(2.297)
ln Labour productivity $_{t-1}$	-3.180	-0.944	-0.838
	(7.433)	(7.833)	(8.413)
Interaction $_{t-1}$			0.182
			(3.539)
ln Employment $_{t-1}$		2.658	2.637
		(4.440)	(4.429)
ln Assets $_{t-1}$		-3.798	-3.792
		(3.675)	(3.673)
Observations	759	759	759
Clusters	268	268	268
R-squared	0.63	0.63	0.63
adj. R-squared	0.57	0.57	0.57
Year FEs	Y	Y	Y
Country-year dummies	Y	Y	Y
Industry trends	Y	Y	Y
Firm FEs	Y	Y	Y

Notes: A) Firm-level clustered standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. B) All variables are normalised by industry means computed yearly at NACE 4-digits level.

Part III: The Impact of FDI on Recipient Economies

Chapter 5 – Inward FDI and Local Innovative Performance. An empirical investigation on Italian provinces

5.1 Introduction

In the current wave of globalisation of the world economy it is widely acknowledged that foreign direct investment (FDI) plays a growing and primary role (WTO, 1996; Dicken, 2007). UNCTAD (2012) shows that the volume of FDI has dramatically risen in the last twenty years, with an increase in world FDI inward stock of about 2 millions of dollars to more than 20 millions.

Not surprisingly, policy makers in most countries place great emphasis on the potential benefits that may stem from the attraction of FDI. The view that attracting foreign subsidiaries of multinational enterprises (MNEs) will yield great advantages to recipient economies is grounded in the belief that some positive knowledge externalities arise from foreign activities and spread to domestic firms. Beside of several potential benefits, the increase of domestic productivity and the transfer of more advanced technology are frequently considered as the main rationale for integrating measures of attraction of FDI in local economic development policies. In this respect, the idea that knowledge plays a fundamental role in the process of growth is deeply rooted in economic theory, which assigns a crucial role to innovation and its diffusion in the economic performance of nations (Grossman and Helpman, 1991).

Nevertheless, it is not entirely clear whether FDI concretely benefits recipient economies. Despite the large amount of studies in this field and its relevance for public policies, evidence on FDI-induced knowledge

externalities remains inconclusive and empirical exercises frequently offer mixed suggestions (Smeets, 2008).

By employing Italian manufacturing data to answer the question whether inward FDI benefit the innovative performance of recipient economies, this paper will attempt to add some new evidence to the literature on the impact of FDI. There are a number of elements that make this empirical exercise different from the bulk of previous research. Firstly, the impact of knowledge externalities associated to FDI is investigated on direct measure of innovation, namely, patent data. To the best of our knowledge, few papers adopt such an indicator (Cheung and Lin, 2004) while the literature is dominated by studies based on broader measures of economic performance such as total factor productivity (TFP) of domestic firms, labour productivity or growth rate. Secondly, FDI are also measured with a direct indicator. Indeed, while most studies use several proxies for the presence of foreign firms into the host economy, this paper employs the real inflow of foreign capital in Italy. This provides a more detailed measure of the actual magnitude of the activities carried out by foreign enterprises. Thirdly, FDI-induced knowledge externalities are underexplored in the case of Italy, with few notable exceptions represented by recent contributions (Castellani and Zanfei, 2003; 2007; Benfratello and Sembenelli, 2006). The Italian case is instead very interesting for the well-known geographical dualism of the Italian economy. Finally, the occurrence of knowledge spillovers is investigated along provincial lines (NUTS-3), that is, at a geographical scale that is rarely adopted in the literature mainly due to lack of data. This allows estimating a more precise effect by reducing the potential ecological fallacy[39] and also taking into appropriate consideration the existence of

[39] In its simplest definition the ecological fallacy may be interpreted as error of deduction that involves deriving conclusions about a certain observation solely on the basis of an analysis of broader group data. In the case of this analysis the inference on the impact of FDI on local innovative performance may be

spatial disparities in both inward FDI and innovation performance. Results reveal that local production systems do benefit from knowledge externalities generated by FDI in Italy. Our finding also passes a fair number of checks suggesting that local innovative performance relies on both internal and external sources of knowledge.

The paper is organized as follows: Section 2 reviews the existent literature devoted to the economic rationale of the impact of FDI on innovation. Section 3 describes data while Section 4 introduces the main methodological challenges associated to the estimation of the causal effect of FDI on innovation and presents in detail the identification strategy adopted. Section 5 discusses the main findings while in Section 6 the robustness of results is checked. Finally, concluding remarks and policy considerations are developed in Section 7.

5.2 Conceptual background and literature review

Traditionally, the literature on FDI spillovers implicitly assumes that MNEs have more advanced technology than most domestic firms. Hence, the entry of foreign affiliates into an economy is believed to benefit local firms by providing them with a number of advantages not available domestically, ranging from new technologies to market opportunities. The "superiority" of foreign firms has been firstly theorised within the industrial organisation literature by Hymer (1976/1960)[40]. Domestic firms have general advantages linked to better information about the

inaccurate if performed at a broader geographical level of analysis for two key reasons due to the extreme heterogeneity in terms of structure, composition and absorptive capacities of different local areas (Gagliardi, 2015).

[40] Hymer's seminal theory is contained in his 1960 doctoral dissertation which was published posthumously in 1976.

national market, the language and the legal and political system. Thus, firms wishing to operate in foreign markets need to overcome domestic competition by increasing their efficiency through the acquisition of firm-specific advantages. These include the capacity to access factors of production at lower cost, product differentiation and the availability of more advanced knowledge. This initial conceptualisation is further supported by Dunning (1980), who theorises the existence of ownership-specific advantages possessed by some firms that decide to internalise them and to locate in foreign markets as a way to maximize their productive efficiency in a world of imperfect competition and uncertainty. This literature suggests that FDI occurs when firms possess own assets and find more profitable to internalise the use of such advantages rather than selling or sub-contracting them to other firms. At the same time, these firms decide to locate in foreign countries where specific location factors allow for a better exploitation of their ownership advantages.

More recently, but in a similar vein, scholars suggest that MNEs are more productive and innovative than domestically-oriented firms (Criscuolo et al., 2010). Indeed, it is widely acknowledged that MNEs tend to invest large amounts in R&D, generating a notable share of global knowledge (Castellani and Zanfei, 2006; Dicken, 2007; McCann and Acs, 2009).

Given the alleged superiority of technology and assets of MNEs, it is commonly believed that when a foreign subsidiary locates in a new market some knowledge spills over to domestic firms. The idea that FDI may benefit host economies through spillover effects is empirically explored since the 1970s. Early works find a positive relationship between the foreign presence in a host economy and the performance of domestic firms (Caves, 1974, Globerman, 1979, Blomström and Persson, 1983).

Since the 1990s empirical works have increasingly refined along with improvements in the quality of data. In general, recent works try to open

what Görg and Strobl (2005) call “the black box” of spillover effects from FDI. In other words, researchers have started to explore both theoretically and empirically a number of specific mechanisms through which the presence of foreign activities may benefit domestic firms (Blömstrom and Kokko, 1998; Liu et al., 2000; Liu et al., 2001; Saggi, 2002; Harris, 2009). Research indicates that the nature of these channels of knowledge transmission is essentially dual for interactions between domestic and foreign firms occur at both intra- and inter-industry level. Intra-industry (or horizontal) interactions between foreign and domestic firms may lead to knowledge leakages through a variety of mechanisms. Some scholars suggest that demonstration effects play a great role in knowledge transmission whenever domestic firms are exposed to the superior technology of MNEs subsidiaries (Castellani and Zanfei, 2003; Görg and Greenaway, 2004; Crespo and Fontoura, 2007, Smeets, 2008; Monastiriotis and Alegria, 2011). Part of the literature argues that intra-industry spillovers may be denser in more competitive markets. The competitive pressure caused by the entry of foreign firms may act as an incentive for domestic firms to use available resources and existing technology more efficiently (Blomström, 1989; Wang and Blomström, 1992) as well as speeding up the process of adoption of new technologies (Görg and Greenaway, 2004). Finally, intra-industry spillovers have been analysed looking at labour mobility (Fosfuri, Motta and Rønde, 2001) as well as pre-existing regional innovativeness (Huang et al., 2012).

Inter-industry (or vertical) interactions between foreign and domestic firms appear to be more witting than intra-industry dynamics. As a matter of fact, when firms operate in different industrial segments that are vertically connected with each other, they can intentionally establish backward and forward linkages. From an empirical point of view a number of evidences have been provided in support of the existence of

valuable inter-industry spillovers working through backward and forward linkages (Blalock, 2001, Ernst and Kim, 2002, Crespo and Fontoura, 2007, Javorcik, 2004, Javorcik and Spatareanu, 2008, 2009, Bitzer et al., 2008, Blalock and Gertler, 2008, Markusen and Venables, 1999, Castellani and Zanfei, 2006, Crespo and Fontoura, 2007).

Beside this large body of literature, it is worth mentioning that some recent contributions highlight that the origin of foreign investment is a relevant aspect for a full understanding of FDI-induced spillovers. In fact, while it is customary to conceive MNEs as endowed with superior knowledge as compared to domestic firms, this is something that is intimately connected with the evidence associated to MNEs from industrial countries. Nevertheless, in recent years, the growing importance of emerging countries in the global arena (e.g. BRICS), is accompanied by a spur in FDI originating from developing countries (Luo and Tung, 2007). Specifically, MNEs from this group might not be endowed with superior technological attributes and, instead, their internationalisation strategies in foreign locations (i.e. industrial countries) are likely to be oriented towards knowledge augmentation and the acquisition of strategic resources (Chen and Chen, 1998; Mathews, 2002; Luo and Tung, 2007). In this respect, there is some evidence that when domestic firms are acquired by MNEs from developing countries, the former suffer large decreases in employment, sales and labour productivity as compared to takeovers undertaken by MNEs from industrial countries (Chen, 2011).

5.3 Data

Data used for the analysis is collected from different and complementary sources aggregated at provincial level[41]. Due to the nature of the data and, particularly, to the characteristics of our dependent variable (i.e. patent data) and main regressor of interest (i.e. FDI inflows), the analysis will be restricted to the manufacturing sector. All variables are taken in logarithms and averaged across the period 2001-2006[42].

Innovative performance - The dependent variable is defined as the provincial share of patents on provincial GDP and it is provided by the OECD REGPAT database containing detailed patent data at NUTS-3 level. Despite some well-known limitations associated with the non-patentability of some inventions, the difficulties in accounting for the differentiated degree of novelty of patented products (not all patented products are equally 'new' and/or valuable) and their potential sectoral bias, patent data remains a reliable measure of innovative output since it provides comparable information on inventions across different regions and a broad range of technological sectors (OECD, 2001; Sedgley and Elmslie, 2004). Moreover, it is worth noting that we consider patents filled by applicants rather than inventors since MNEs tends to apply for a

[41] Note that we consider 103 provinces over the total number of 107 because of the lack of data on the 4 more recently-created Sardinian provinces of Olbia-Tempio, Medio Campidano, Ogliastra and Carbonia Iglesias. Note also that provinces are administrative areas in Italy rather than functional units. Alternative geographies include "Sistemi Locali del Lavoro" that are functional labour markets areas defined based commuting flows. However data for these units are more limited and available for much shorter time series. In addition to that it is worth noting that the majority of existing studies in Italy adopts either NUTS2 or NUTS3 areas as spatial unit of analysis. This facilitates the comparability of results.

[42] Patent data at the NUTS3 level are in principle available for a longer time series; however data on control variables at the provincial level prior to 2001 are unavailable. Even though still relatively limited, the coverage of a six year period is a significant improvement on the existent quantitative literature on the determinants of innovation in the Italian provinces. All existing studies cover a similar or shorter time span. For example Cainelli et al. (2005) looking at the role of social and institutional factors on the innovative performance of Industrial districts in Emilia Romagna cover the 2002-2007 period; in a similar vein Laursen and Masciarelli (2007), whose analysis is focused on larger geographical units (NUTS-2 Regions), still cover a shorter time interval (2001-2003). More specifically related to the impact of FDI on productivity in the Italian case, Castellani and Zanfei (2003) use firm level data for the period 1993-1997 while Castellani and Zanfei (2007) uses a time span 1992-1997.

patent from their headquarters, even when a patent is invented in a different region (Verspagen and Schoenmakers, 2000). This measure, in line with the existing literature, is likely to limit any concern related with the noise associated to patent applications filled by inventors who are resident in the recipient province and employed in foreign subsidiaries. In other words, our measure of innovation does not include the patenting activity of MNEs, which would bias our estimation of knowledge externalities.

FDI Inflows - Data on inward FDI comes from the Balance of Payments of the Bank of Italy. The database provides detailed data on financial flows by province and sector. This represents a key advantage over the existing literature using indirect proxies for the presence of MNEs (e.g. share of foreign employment, share of foreign enterprises) instead of direct measures of flow. Figure 5.1 shows the FDI trend for the period 2001-2006. The upper left graph plots the national share of FDI inflows showing an increasing amount of foreign capital into the Italian economy over the whole period. However, when trends by macroregion are taken into account it is evident that the national aggregate is driven by Northern regions while the contribution of the South remains negligible. This preliminary evidence suggests the existence of a relevant and significant self-selection of FDI into more productive areas making more urgent the need of addressing reverse causality.

[Figure 5.1 here]

Innovative Inputs - Controls for the amount of private investments in R&D and the share of graduates in science and technology on total population are provided by ISTAT and are available at regional level (NUTS-2).

Additional Regressors - Further controls include the share of employment in manufacturing in each province as proxy for specialization, the share of long term unemployment as proxy for the characteristics of the local labour market and population density as proxy for agglomeration economies. All these additional regressors are provided by ISTAT at NUTS-3 level. Furthermore, a full set of macro-regional dummies defined at NUTS-1 level is included to control for unobserved regional characteristics.

The detailed description of variables used in the analysis is reported in Table 5.1.

[Table 5.1 here]

5.4 Methodology

The estimation of the relationship between FDI and innovation implies a number of methodological issues. First of all, it has to be considered that the impact of FDI on local innovation is unlikely to be recoverable on a yearly basis. The existence of a certain time lag between the localization of a new business activity and the emergence of a related innovative outcome is perfectly reasonable, both if the impact of FDI passes through the innovative activities performed by the new firm and if this impact is instead mediated by an externality mechanism. This concern is exacerbated by the nature of our innovation variable. Despite adopting patent applications[43] as key measure for innovative activities, the granting procedure may require a certain amount of time before being formalized.

Moreover, the possibility to exploit the panel dimension is prevented by an additional consideration. Unfortunately, some of our relevant controls, in particular the amount of investments in R&D and the share

[43] Defined as the OECD as the closest data to the inventive process

of graduates, are only available at regional level (NUTS-2). This implies that a certain degree of measurement error is likely to affect our estimation and to lower the credibility of our results. Finally, due to the limited time dimension of the panel, ranging from 2001 to 2006, the within variation in our sample may be insufficient to identify the effect of our regressor of interest (Baltagi, 2005).

Finally, it is also worth emphasizing that externalities are particularly difficult to identify since externalities, by their very nature, "leave no obvious paper trail by which they can be tracked or measured" (Duranton, 2006, p.26). Nonetheless spatially aggregated measures of FDI should provide a better proxy of the total effect over and above its direct component (see Moretti, 2004) that in the case of this paper may be associated to the innovative contribution of the individual foreign subsidiary.

Taking into account all these aspects, the analysis of the impact of FDI on local innovation is developed by adopting a between-groups approach based on ordinary least squares (OLS). This implies using time averages of data for the time interval 2001-2006 (group means)[44].

The estimated equation is defined as a place based Knowledge Production Function (KPF) at provincial level (Crescenzi et al., 2013), where inward FDI is included as an additional regressor and externalities associated to FDI are modelled according to a spatial correlation approach.

The equation of interest will therefore take the following form:

$$Innovative\ performance_{it} = \beta_0 + \beta_1 K_{it} + \beta_2 L_{it} + \beta_3 FDI\ Inflows_{it} + \beta X_{it} + \varepsilon_{it} \qquad (1)$$

[44] As acknowledged by the existing literature the between-groups estimator is more suitable to address issues related to measurement error as compared to standard panel techniques such as random or fixed effects estimators.

where $Innovative\ performance_{it}$ is the share of patents by applicant over provincial GDP in province i at time t, $K_{it}$is the share of private investments in R&D, L_{it} is the share of graduates in science and technology, FDI_{it} is our regressor of interest, namely FDI inflow as share of provincial GDP, X is a vector of provincial controls including the share of employment in manufacturing as proxy for specialization, long term unemployment share, population density and a full set of macro-regional dummies.

Another traditional methodological issue that has been highlighted in the existing literature is the potential reverse causality between FDI and innovation. Our key hypothesis is that FDI affect local innovative performance contributing to enrich the local knowledge-base and generating positive spillovers through virtuous cycles of cooperation and competition. However, the sign of the relation may indeed be reverse: FDI may be more attracted by areas showing successful innovative performance since, as profit-maximizing agents, firms may have an economic incentive to locate in successful areas and to exploit the advantages associated with local favourable conditions. This is a particularly relevant concern in the case of MNEs aiming to tap into local capabilities and to benefit from local competitive advantages, which would imply the risk of overestimating the impact of FDI. On the other side, the effectiveness of new financial investments as carriers of novel information and best practices may be negatively affected by a local environment that is not able to absorb and transform these inputs into innovation. This further entails that in the case of deprived areas or locations characterized by relevant deficits in terms of local absorptive capacities we may underestimate the impact of FDI. As emphasized by

previous research in a multilevel analysis the sign of the potential bias is not straightforward (Haskel et al., 2007).

Most recent papers attempt to disentangle the true effect of FDI either exploiting GMM techniques (Benfratello and Sembenelli, 2006; Driffield, 2006; Crespo et al., 2009) or through an IV approach (Haskel et al., 2007; Crescenzi et al., 2013).

To recover predictions about the genuine causality between FDI and local innovative performance we adopt an instrumental variable (IV) approach based on the "shift-share" methodology associated with Bartik (1991) and recently popularized by a number of contributions in different fields (Card, 2007; Moretti, 2010; Overman and Faggio, 2012). To the best of our knowledge, this methodology has not been adopted so far in the literature on the impact of FDI, mainly due to the nature of proxies employed to measure FDI used in the great majority of past studies. This instrument uses initial shares of employment by division[45] in each province and the average amount of FDI inflows at national level between 2001 and 2006 by division to instrument the amount of FDI that each province receives during the same time interval. The rationale behind this instrumental variable builds on the idea that in the absence of area specific shocks, each province would benefit from a share of national FDI inflows proportional to its initial share of employment by division taken as a measure of specialization and calculated in 1991. This further implies assuming that the location decision of MNEs looks at the characteristics of the local production system and tends to be skewed toward areas characterized by a greater potential in terms of backward and forward linkages, complementarities in production, availability of trained labour force and local know how (Saliola and Zanfei, 2005). The

[45] This is defined in terms of 2-digits NACE classification and data refers to the 1991 Census. Note that the 2-digit dimension has been preferred to more detailed classification in order to account for both broader sectoral spillovers.

instrument is then expected to be significantly and positively correlated with our regressor of interest due to the traditional stability in the sectoral specialization of Italian provinces.

More specifically it will takes the following form:

$$IV\_FDI_i = \sum_j Employment\ share^j_{i,1991} \times (1 + FDIInflows^j_{2001-2006}) \quad (2)$$

where $FDI^j_{2001-2006}$ represents the share of FDI inflows in the 2-digits sector j at national level within the period 2001-2006 and $Employment\ share^j_{i,1991}$ is the share of employment in sector j and province i in 1991. This implies that the flows of FDI at national level by sector are attributed to each province based on the initial degree of sectoral specialization.

5.5 Results and discussion

The main results for our specification of interest are reported in Table 5.2.

[Table 5.2 here]

Column 1 presents our baseline specification where the innovative performance of Italian provinces is regressed on the amount of inputs devoted to the innovation process, namely investment in R&D and share of graduates in science and technology. As expected, both innovation inputs are positively and significantly related to the generation of new knowledge.

Column 3 includes explicitly the regressor of interest, namely the amount of FDI as share of provincial GDP, supporting the existence of a positive and significant correlation at 1% level with the innovative

performance of Italian provinces. Further controls are progressively added in the following columns in order to test for the robustness of our correlation against the inclusion of potentially relevant variables. Regressors for population density as proxy of agglomeration, value added in manufacturing as measure of specialization and long term unemployment to control for local labour market characteristics are explicitly included in columns 3, 4 and 5 respectively. Column 5 also adds a full set of macro-regional dummies to rule out the risk of unobserved regional characteristics operating at broader geographical scale. This is a particularly relevant issue in the case of Italy given the traditional north-south divide within the country.

All the regressors show the expected sign with population density significantly and positively correlated to local innovative performance and long term unemployment significantly and negatively associated to innovation. Interestingly, our control for specialization in manufacturing, despite entering our regression as significant and positively related to innovation (Tab.2, Col. 4), becomes gradually less significant once further controls are included, corroborating our feeling with respect to the role played by the traditional north-south Italian dichotomy. Finally, it is worth noting that the inclusion of additional controls lower the significance of investments in R&D, further supporting the key role of external capital (complementing the limited financial capacity of the Italian production system based mainly on small and medium enterprises) and the availability of an "enabling environment for innovativeness" (Glaeser et al., 2010) in fostering local innovative performance.

The regressor of interest, the share of inward FDI, despite the slightly decreasing magnitude in the coefficient, remains significant at 1% level and positively correlated to innovation in all specifications.

In spite of the evidence in favour of the existence of a robust correlation between FDI and local innovative performance in the case of Italian provinces, it has to be acknowledged that our specification, focusing only on the inflow of FDI, may underestimate the potential negative effect of foreign disinvestment. The relevance of the latter as key control for the investigation of the impact of FDI inflows in specific geographical contexts has been rarely investigated within the existing literature mainly due to lack of data. Nonetheless, foreign disinvestment may weaken the local production system and reduce the intensity of localized knowledge externalities. This is a particularly relevant concern in the case of Italy where public incentives for the attraction of FDI, especially in southern regions, have been extensively adopted without taking properly into account their long run sustainability. In order to control for this potential negative impact, column 6 includes an additional regressor for foreign disinvestment. As expected, it enters the estimation with a negative and significant sign, also contributing to increase the magnitude of our regressor of interest. This suggests that disinvestment may have a second order effect in determining the innovative performance of local areas. This evidence is reasonable in light of our dependent variable measuring innovation rather than productivity or growth. The valuable knowledge externalities arising from FDI are likely to be more relevant in the case of new investment bringing into the local economy novel distinctive technological capabilities. On the other side, disinvestment is plausibly affecting more consistently the strengths of the local production system and weakening the intensity of localized agglomeration economies. This, in turn, reduces the capability to exploit the benefits associated to novel information.

In order to try to address the potential bias related to additional omitted variables and reverse causality we adopt the instrumental variable approach previously discussed. Results reported in Column 7 (Table 5.2) confirm the positive and highly significant correlation (1%

level) of inward FDI with our dependent variable. Despite being not evident in terms of changes in the significance level of our regressor of interest, the Hausman test confirms the existence of a substantial bias in our OLS estimates that justifies the change in the magnitude of our coefficient. A change of 1% in the share of FDI on provincial GDP generates a 29% increase in the share of patents application per million of inhabitants. In the interpretation of this value it should be borne in mind both the scale of our dependent and independent variables[46] and the nature of our measure of innovation, namely patent applications, that are likely to be more representative of the innovative performance of large enterprises rather than small and medium firm. Although few papers investigate the impact of FDI in the Italian case, the evidence in favour of a positive effect of FDI correlates with some recent evidences (Castellani and Zanfei, 2003, 2007). Despite that, any comparison on the magnitude of the effect remains controversial due to a substantial difference in the actual variables employed. Most of the existing studies adopting proxy measures for both FDI and local innovative performance tend to overlook any further discussion about the actual size of the economic effect.

The first-stage estimate reported in Table 5.3 confirms the reliability of our instrument, which is significantly correlated with the instrumented variable. In addition to that and in compliance with the econometric literature on weak instruments (Staiger and Stock, 1997; Stock and Yogo, 2005), the F-statistic for the first-stage is reported in Table 5.4 showing a value that is generally above both the value of 10

[46] Note that in respect to the existing literature our FDI variable reflects the real amount of capital inflows. An average increase of 1% in the share of FDI over GDP is quantifiable in more than 1 million of Euros while an increase of 29% in the share of patents over GDP is about 7.46 patents.

reported by Staiger and Stock (1997) and the thresholds values defined by Stock and Yogo (2005).

[Tables 5.3 and 5.4 here]

5.6 Robustness Checks

We start checking the robustness of our results by looking at the goodness of the instrumental variable approach. Table 5.5 reports our 2SLS estimation progressively eliminating all the controls. The sign and significance level of our regressor of interest remains unchanged confirming that its effect on the innovative performance of Italian provinces is not driven by model specification. This test may also be taken as indirect evidence supporting the validity of the exclusion restrictions.

[Insert Table 5.5 here]

Finally, in order to provide further support to the instrumental variable approach, the reduced form equation is estimated by means of OLS regression of our dependent variable on the instrument and exogenous controls (Table 6). As shown by Angrist and Krueger (2001), although being poorly informative with respect to the real magnitude of the coefficient, the reduced form can be used as additional test to determine the sign of the coefficient of interest. The estimation of the reduced form equation confirms that FDI is a positive and relevant determinant of innovation in Italian provinces.

[Insert Table 5.6 here]

The estimation performed in this paper demonstrates to be robust to the inclusion of additional significant regressors and to the correction of the potential bias associated with the endogeneity of the regressor of interest. The instrumental variable approach discussed has showed to be strongly correlated to the instrumented variable and not affected by issues related to the specification of the model. Nevertheless, there is still the possibility that our instrument is correlated with other variables not explicitly taken into account in our regression. According to the existing literature on the impact of FDI, it is reasonable to assume that our instrument for FDI is correlated with a negative competition effect provoking the exit of local firms from the market. Despite being acknowledged by many existing studies, this issue is rarely explicitly addressed in the literature mainly due to lack of data. Nonetheless, a negative competition effect due to the entry of MNEs with superior technological, managerial and organizational skills (Cantwell and Iammarino, 2003) crowding out local firms may impact the structure of the local production system weakening local innovative potentials. To control for this specific aspect, our instrument has been regressed over the provincial share of domestic companies in liquidation. Results reported in Table 5.7 rule out any doubts regarding a potential systematic correlation with our instrument.

[Table 5.7 here]

Finally, we perform a further check for the robustness of our results by considering a dependent variable that is more commonly employed in the existing literature, namely, labour productivity[47]. Results shown in Table 5.8 confirm that the key intuition does not change when a more

[47] This is measured as the value added in manufacturing per unit of labour. Data are available at the provincial level for 2001-2006 and comes from ISTAT. While labour productivity is widely used in the literature, TFP has to be conceptually preferred. However, data on TFP is not available at NUTS-3 level.

traditional analytical framework looking at the spillover effects of FDI on a measure of productivity is taken into consideration. FDI still exhibits a significant and positive sign both in the OLS and IV specification. Therefore, this result suggests that the evidence in favour of FDI-induced externalities persists also within an empirical setting that is more coherent with previous studies.

[Table 5.8 here]

The estimation of the impact of FDI on local innovative performance seems to be robust to a number of checks, encompassing the inclusion of additional controls and the implementation of the 2SLS estimation to address the endogeneity of the regressor of interest. FDI proved to be a significant determinant of local innovative performance by enriching the knowledge base of Italian provinces and generating valuable positive knowledge externalities.

5.7 Conclusion

In the last few decades the attraction of FDI has been placed at the core of the policy agenda in both developed and developing countries. This centrality in the political debate is supported by the belief that the attraction of external resources could benefit recipient economies thanks to knowledge externalities arising from the localization of affiliates of MNEs endowed with superior technological, managerial and organizational skills.

However, existing academic literature suggests that local economic conditions are a crucial pre-requisite for valuable knowledge externalities to be successfully captured by local production systems and transformed in innovation.

So far there is weak consensus on whether knowledge externalities associated to FDI benefit systematically the economic and innovative performance of host locations. Such an inconclusiveness of the existing empirical literature is due to a number of flaws.

A first point concerns measurement issues associated to the adoption of proxies for both FDI and innovative performance. Traditionally, FDI is indirectly measured by indicators of foreign presence such as the share of employment in foreign firms or the number of foreign firms. These variables do not account for the actual size of foreign capital mixing up relevant financial investment with minor flows. A second concern regards the endogeneity related to the estimation of the causal impact of FDI. While early literature generally focuses on the correlation between FDI and outcome variables, more recently scholars have paid deeper attention to these sources of biasedness. However, there are still few attempts to track consistently this issue and more work is needed in this direction.

This paper aims at contributing to the existing debate with new evidence and attempts to address both the above mentioned problems. Firstly, we adopt a direct measure of FDI consisting of the real amount of capital flow in Italian provinces. Secondly, we try to tackle endogeneity concerns through IV methodologies. In our empirical exercise, we find that FDI contributes significantly to the patenting activities of Italian provinces over the period 2001-2006. This finding correlates with similar evidence provided by some previous empirical studies.

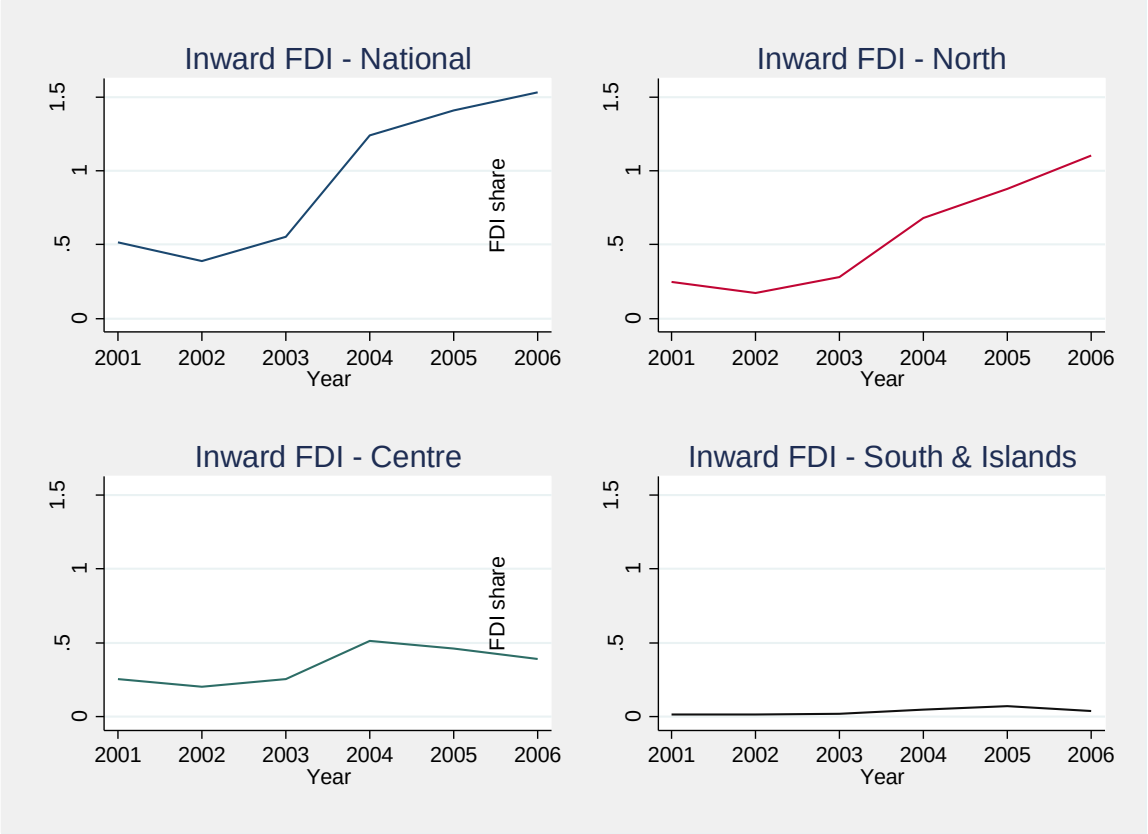
Beside of this, it is worth noting that our investigation focuses on the gross impact of FDI without disentangling the channels through which knowledge externalities affect local economies. It remains in our future research agenda the development of a more detailed investigation of the mechanisms through which knowledge spills over space. This further direction for research will be possible along with improvements in the quality of data. An additional limitation of this final chapter also

concerns the cross-sectional nature of our data for estimation purposes: not including province-level fixed effects, in fact, might introduce an estimation bias even in the IV equation, given that unobserved drivers of innovation could be correlated with FDI. Although this represents a potential issue, we are confident that the impact of this unobserved source of heterogeneity is very limited when the exogenous instrument is adopted. Therefore, this represents another area for improvement in our future research agenda.

In terms of policy considerations, results suggest that FDI can play an important role in fostering local innovative outcomes. Therefore, local economies should consider external sources of knowledge as a complement to internal generation (Bathelt et al., 2004). This is even more relevant considering that a core local input of innovation such as private R&D seems to be less important than expected in our empirical exercise probably due to the structure of the Italian production system based on a great share of small and medium enterprises with a reasonably limited financial capacity. Our results are also important in light of the well-known historically poor amount of FDI that Italy receives annually as compared to other large European countries, such as UK, Germany and France. Italy has never adopted any structured policy oriented to the attraction of FDI. The empirical evidence provided suggests that creating an actual policy of FDI attraction that stimulates foreign investors might be a valuable policy option. Clearly, while our results suggest that FDI can be beneficial *per se*, we are obviously cautious in arguing that Italian provinces should attract FDI irrespectively of local strength and weaknesses in terms of specialization of labour force and specialization and competencies of local firms. Indeed, the specific profile of local economies have been shown to play a strong role in shaping the effectiveness of knowledge externalities arising from FDI as demonstrated by the relevance of additional localized drivers

of knowledge generation such as human capital and agglomeration economies.

Figure 5.1: Share of Inward FDI per Macro-Region



Source: Authors' elaborations on Bank of Italy data.

Table 5.1: Variables List

Variable	Definition	Source	Geography	Time
Patents	Applications to EPO (by applicants)	OECD	Provincial	2001-2006
Private R&D	Share of expenditure for private R&D on GDP	ISTAT	Regional	2001-2006
Graduates	Share of graduates in science and technology on population	ISTAT	Regional	2001-2006
FDI	Millions in national currency	Bank of Italy	Provincial	2001-2006
Population Density	Population on provincial surface	ISTAT	Provincial	2001-2006
Employment in Manufacturing	Share of employment in manufacturing on total employment	OECD	Provincial	2001-2006
Long Term Unemployment	Share of long term unemployed on population	ISTAT	Regional	2001-2006
Foreign Disinvestment	Millions in national currency	Bank of Italy	Provincial	2001-2006
Firms in Liquidation	Share of firms in liquidation on total number of firms	Unioncamere	Provincial	2001-2006
Labour Productivity	Value added in manufacturing per unit of labour	ISTAT	Provincial	2001-2006

Notes: a) Patents, FDI and Foreign Disinvestment variables are weighted by provincial GDP, measured in millions of national currency (source: OECD); b) all variables are averaged over the period 2001-2006 and enter regressions in log form.

Table 5.2: Inward FDI and Local Innovative Performance

Dep.Var. Patents	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) OLS	(6) OLS	(7) 2SLS
Private R&D	0.476***	0.335**	0.340**	0.188	0.0544	0.0211	-0.0148
	(0.154)	(0.167)	(0.159)	(0.161)	(0.136)	(0.148)	(0.172)
Graduates	0.633**	0.707**	0.674**	0.669**	0.427***	0.468***	0.719**
	(0.309)	(0.300)	(0.294)	(0.301)	(0.154)	(0.166)	(0.297)
FDI		0.137***	0.134***	0.0993***	0.0675***	0.0782***	0.296***
		(0.0373)	(0.0354)	(0.0319)	(0.0251)	(0.0241)	(0.0541)
Population Density			0.311*	0.327*	0.420***	0.449***	0.383**
			(0.182)	(0.177)	(0.156)	(0.155)	(0.173)
Employment in Manufacturing				1.170***	0.511*	0.505*	0.0385
				(0.268)	(0.263)	(0.259)	(0.308)
Long Term Unemployment					-0.578***	-0.486***	-0.397***
					(0.0805)	(0.142)	(0.153)
Foreign Disinvestment						-0.0467**	-0.0728**
						(0.0185)	(0.0321)
Constant	-7.592***	-6.956***	-8.561***	-7.560***	-8.125***	-8.646***	-8.341***
	(0.806)	(0.800)	(1.377)	(1.420)	(1.183)	(1.189)	(1.452)
Macro-Regional dummies	NO	NO	NO	NO	NO	YES	YES
Observations	103	103	103	103	103	103	103
R-squared	0.380	0.489	0.510	0.579	0.684	0.707	0.479

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 5.3: First Stage Regression

Dep.Var.: FDI Inflows	(1) OLS
Private R&D	0.0847
	(0.4254)
Graduates	-1.1870
	(0.8479)
Population Density	0.0277
	(0.4472)
Employment in Manufacturing	1.9674**
	(0.9414)
Long Term Unemployment	-0.4595
	(0.4398)
Foreign Disinvestment	0.0798
	(0.1024)
IV FDI	4.9374***
	(1.2091)
Constant	-1.1380
	(3.5854)
Macro-Regional Dummies	YES
Observations	103
R-squared	0.314

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 5.4: First Stage Statistics

Variable	F(1, 93)	P-Value
IV FDI	16.67	0.000

Table 5.5: Model Specification

Dep.Var.: Patents	(1) 2SLS	(2) 2SLS	(3) 2SLS	(4) 2SLS	(5) 2SLS	(6) 2SLS
FDI	0.296***	0.300***	0.233***	0.260***	0.275***	0.305***
	(0.0541)	(0.0583)	(0.0423)	(0.0379)	(0.0459)	(0.0424)
Private R&D	-0.0148	-0.00440	0.00445	0.103	0.195	0.162
	(0.172)	(0.149)	(0.152)	(0.175)	(0.177)	(0.192)
Graduates	0.719**	0.686***	0.571**	0.754**	0.754**	0.799**
	(0.297)	(0.259)	(0.231)	(0.324)	(0.318)	(0.340)
Population Density	0.383**	0.382**	0.362**	0.291	0.283	
	(0.173)	(0.172)	(0.171)	(0.180)	(0.186)	
Employment in Manufacturing	0.0385	0.0209	0.186	0.669***		
	(0.308)	(0.315)	(0.276)	(0.256)		
Long Term Unemployment	-0.397***	-0.389***	-0.432***			
	(0.153)	(0.111)	(0.112)			
Foreign Disinvestment	-0.0728**	-0.0731**				
	(0.0321)	(0.0324)				
Constant	-8.341***	-8.269***	-7.591***	-7.162***	-7.762***	-6.172***
	(1.452)	(1.480)	(1.372)	(1.513)	(1.467)	(0.871)
Macro-Regional dummies	YES	NO	NO	NO	NO	NO
Observations	103	103	103	103	103	103
R-squared	0.479	0.468	0.546	0.443	0.395	0.324

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 5.6: Reduced Form Equation

Dep.Var.: Patents	(1) OLS
IV FDI	1.461***
	(0.384)
Private R&D	0.0103
	(0.143)
Graduates	0.368**
	(0.145)
Population Density	0.391**
	(0.160)
Employment in Manufacturing	0.621**
	(0.254)
Long Term Unemployment	-0.533***
	(0.142)
Foreign Disinvestment	-0.0492**
	(0.0188)
Constant	-8.677***
	(1.169)
Macro-Regional dummies	YES
Observations	103
R-squared	0.715

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 5.7: Market Exit

Dep.Var.: IV FDI	(1) OLS
Firms in Liquidation	0.157
	(0.0987)
Constant	0.654*
	(0.355)
Observations	103
R-squared	0.115

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 5.8: Inward FDI and Labour Productivity

	(1)	(2)
Dep.Var: Labour Productivity	OLS	2SLS
Private R&D	0.0046	0.0031
	(0.0198)	(0.0201)
Graduates	0.0355	0.0458
	(0.0348)	(0.0396)
FDI	0.0145***	0.0235**
	(0.0053)	(0.0103)
Constant	10.78***	10.79***
	(0.177)	(0.174)
Controls	YES	YES
Macro-Regional dummies	YES	YES
Observations	103	103
R-squared	0.407	0.385

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

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