Foreign Direct Investment – a Behavioural Finance Approach

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Thesis Abstract

The aim of this thesis is to contribute to the understanding of corporate decision making regarding foreign direct investments (FDI) by applying two behavioural finance concepts, home bias and herding, to the analysis of FDI flows. I contribute to the literature by empirically testing for home bias and herding in an FDI context using a very broad panel dataset. I also contribute by examining the country policy implications of home bias on FDI flows between two countries by estimating the probability of an FDI relationship between two countries. In addition, I contribute by providing a generality of the results at a global, regional and country levels. The analysis in this thesis is conducted on a large panel dataset of the FDI inflows and outflows of 30 OECD member countries with their FDI partners, across 25 years in a bilateral country pair format which is a novel application of this dataset for the purpose of studying home bias and herding in FDI.

The findings in this thesis confirm that there is an overall home country bias that is demonstrated through the preference for direct investments in places with greater physical, institutional and cultural proximity to the investor country. These general findings of home bias are observed and confirmed across different data segments: regional and country levels, across time and across different income country groups. I do not find that the effects of home bias have disappeared or diminished across time or at different geographic locations. Herding is another behavioural finance concept which is considered in the context of FDI outflows. Direct investors tend to herd around a perceived world or a regional leader when considering investments in faraway places and when they do not have the familiarity factors in common with an FDI partner country. Finally, by increasing the institutional and cultural familiarity, countries can significantly increase the probability that they will get a direct investment from a country with which they might not otherwise be having an FDI relationship.

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1. Introduction

1.1.   Thesis Motivation

The aim of this thesis is to contribute to the understanding of corporate decision making regarding FDI by empirically testing two behavioural finance concepts, home bias and herding, in the context of FDI flows. Even though the overall FDI flows in the world have increased by around 150% over the past decade, there is still considerable obscurity behind corporate decisions on FDI. Increased mobility in the capital markets opens the doors for unobstructed direct investments and yet no one truly knows how large, international corporations decide on where to invest abroad in reality. There is a discrepancy from the normative FDI theory on the corporate location decisions for FDI and what can be observed as occurring. Newly emerging markets are first visited by their neighbours in geography or culture and a greater diversification in FDI investments occurs only from the richest few countries.

The organisation of a society which is made up of its economic, political, legal social and moral enforcement institutions (Greif, 1994) has a profound effect on its economic performance and growth. The need for scientific application of human psychology in economics and finance has been suggested for a long time and can be noted as early as 1918 in the work of the economist John Clark. Combining finance and psychology really accelerated since the mid-1980s and is behavioural finance is now part of the mainstream. Behavioural aspects in the theory of the firm and FDI have been suggested since the 1960s in the work of Hymer (1960), Cyert and March (1963), Aharoni (1966) and Agarwal (1980) albeit only as a theoretical notion with scarce empirical supporting evidence. By considering methodological and conceptual behavioural finance issues which are already well established and developed in the equity markets we can have a clearer idea on how corporations make

decisions regarding FDI. The behavioural finance approach to FDI would give more insight to the observed behaviour of companies when they decide to expand into a foreign market which frequently consists of investments to familiar places. Corporations are run by people who have to make decisions for the company's foreign investments at various levels of familiarity with foreign locations. It is natural to expect that the motivation behind these corporate decisions would be affected by a complexity of factors which contribute to the situation can be observed – investing nearby and in familiar places.

By the very nature of its motivation the foreign direct investment (FDI) promotes stable and long-lasting economic links between countries through direct access to the FDI receivers' economy and production means (OECD Benchmark, 2008). It is widely recognised that efficient capital markets help to mobilise financing for growth and development (Evans, 2002). With a proper policy setting, it also provides the host countries with an advanced technological and economic development and promotes further international trade through access to new markets. These activities not only assist the development of countries but in general help integrate the world capital markets and embetter their overall efficiency and the allocation of world resources. The FDI is a natural and widely available indicator of globalization precisely because they measure the extent of international (cross-border) investments which are made with the objective to form a long lasting interest in a country different than that of the investor. Although the barriers to international investment have fallen sharply in the past decades (Stulz, 2005) this financial liberalisation hasn't led to unobstructed cross-country investing. If this is the case for the equity markets it is a natural and intuitive assumption that this should be examined in the case of foreign direct investments in order to check if the same findings can also be observed.

Finding out about the implications and nuances behind the corporate decision making regarding FDI would help guide various countries in their quest for FDI flows. Knowing more

about the patterns of FDI will make the international capital markets more efficient and more liquid and the benefits of globalization more evenly spread around the world.

1.2.   Main Contribution

The aim of this thesis is to contribute to the understanding of corporate decision making regarding foreign direct investments by applying two behavioural finance concepts, home bias and herding, in the analysis of FDI flows. I contribute to literature by empirically testing for home bias and herding in an FDI context and I do so by using a very broad panel dataset. I also contribute by examining the country policy implications of home bias factors (institutional, cultural and physical) by estimating the effect that they have on the probability of having an FDI flows relationship between two countries. In addition, I contribute by providing a generality of the results at a global, regional and country levels, across time and across different country income groups. The analysis in this thesis is conducted on a large panel dataset of FDI outflows and inflows across 30 OECD member countries and their FDI partner countries, over 25 years and in a bilateral country pair format which is a unique application of this dataset for the purpose of studying home bias and herding in FDI. This thesis is the first to empirically test for home bias and herding in foreign direct investment between a large number of bilateral country pairs, at a global, regional and country levels and across time.

1.3.   Main Findings

I find supporting empirical evidence that there is near-home bias in FDI flows. This is observed both in general and throughout geographically different regions, across time and in various country income groups. I find that there is herding in FDI outflows in several

contexts. Finally, I quantify probability impact of the near-home bias factors in a binary dependant variable model and consider them from a country policy perspective. The findings in this thesis which are done on FDI flows are consistent with the findings in the behavioural finance literature which is conducted for the equity markets and international equity flows.

The development of behavioural finance in the past three decades introduced the use of certain psychological concepts into economics and finance in order to account for and measure the human factor. This thesis approaches the study of foreign direct investments and through them - corporate decision making from the perspective of behavioural finance.

The analysis begins with the analysis of home bias in FDI flows at a global level. I argue that corporate financial decisions regarding FDIs are influenced by the institutional, cultural and location familiarity of the host market in addition to macroeconomic factors. This familiarity preference, similarly to investments in the equity markets is the observed home country bias. It is insufficient to consider home bias in FDI flows just on a broad, global level but rather, this issue should be examined in various data segments. Therefore, home bias is analysed in a segmented analysis according to geographical, time and country income criteria.

I further look into another behavioural finance concept – herding, that could be found in FDI flows. I look at herding from several aspects: contemporaneous herding around world and regional leaders and inter-temporal herding of direct investors around portfolio equity flows and regional FDI investments. Finally, when discussing FDIs, one shouldn't avoid discussing the country policy implications.

I estimate the probability that each of the previously established factors has on the probability that two countries will have FDI flows between them. Finding this probability has an impact on policies that countries can undertake in order to attract more FDIs. I find that the widely used cultural distance index has a very small, even negligible influence on the probability whether there will be FDI flows between two countries. I find that the institutional

proximity factors, represented through a shared membership in an economic and political organisation and a shared legal origin system have a much greater impact on this probability of having an FDI flows between two countries. For example, shared history is very important in the Asia-Pacific region; it increases the probability that there will be an FDI inflows relationship by 21%. The shared membership to an economic or political organisation for two countries will increase the FDI inflows probability by 13%. I find that the cultural distance index has a negligible effect probability that there will be an FDI relationship between two countries. This is a very important finding since cultural distances between nations as a sociological category, isn't something that can be changed however, the institutional proximity factors are something that can be addressed and worked on in order to make the host country more familiar to investors.

1.4.   Near-home bias in Foreign Direct Investment

Foreign direct investors are usually multinational corporations that have a long term investment horizon as they invest directly in real assets in a country different than their own. I investigate near-home bias in corporate decision making in an international context. There is extensive financial literature in the field of home bias in equity markets. Equity investors prefer local, domestic investment opportunities against foreign, further away ones (Lewis, 1999). Since FDIs are by definition international, the concept of home bias in this case refers to the preference to invest in places that are more familiar in terms of geography, institutions and culture and is therefore entitled near-home bias. These familiarity factors in addition to the macroeconomics ones have a significant influence on the corporate decisions with respect to FDIs and that this is reflected in the FDI flows among the world countries. I account for the possibility that what is observed as near-home bias can also be explained by taking into

account asymmetric information and the costliness of conducting business abroad and do not find that near-home bias diminishes when those factors are taken into consideration.

I contribute to the FDI literature by empirically testing a set of factors at a global, regional and country level and I also contribute to the home bias literature by extending its application on the international direct investment markets. I contribute to the existing FDI literature by using a large dataset in a bilateral country pair setting that offers a widespread look in the world's FDI flows which enables a generalisation of the findings.

1.5.   *Segmented Analysis of Near-home Bias in FDI Flows*

The observation of near-home bias in FDI inflows and outflows at a global level asserts the question of variability across regions and time periods. Is this near-home bias phenomenon that can be observed globally and is it something that can also be confirmed when the data are segmented according to various criteria? The purpose of this analysis is to identify the differences among investors at a regional and country level, across time and when investments into various country income groups are considered. Near-home bias in FDI flows is not restricted to a particular region or country but can be observed throughout the world. Near-home bias prevails in regional investments with cultural and institutional factors being significant across the different continents. The individual countries exhibit some similarities and some differences which suggest that there is a need for further analysis.

Globalization and the general capital markets liberalisation would lead to a conclusion that the observed near-home bias should diminish over time due to the reduced investment barriers. When I consider different time periods, I do not find support to the claim that near-home bias has diminished over time but rather, it is still persistent.

The direct investments that countries make may differ when it comes to countries with different levels of development. The World Bank provides very useful classifications of

countries according to various income levels per capita. One has to wonder if the observed near-home bias is something that is predominantly important when it comes to investments into developing countries where there is poorer country governance. I do not find that there is a difference in the direct investments of OECD countries across different country income groups and it can be observed that the near-home bias in persistent throughout these different groups. The segmented estimations offer greater insight in the nature of near-home bias across different regions, periods and country income groups and at any differences there might exist.

1.6.   *Herding in Foreign Direct Investment*

The purpose of this analysis is to investigate whether there is herding in the case of foreign direct investments. The decision process of making direct investments isn't a transparent one. FDI theories suggest that firms that seek to expand in other markets are trying to assert their competitive advantage on the local market (Dunning, 1988). Specifically one FDI theory, the oligopoly theory, states that firms of certain industries that find themselves in an oligopolistic market are often forced and prone to follow and imitate their competitors in making investments abroad (Knickerboker, 1973). One reason for this can be competitiveness; firms may feel that the market would punish them if they're perceived to be lagging in investment activity behind their main competitors. Another may be utilizing the other company's investigation and assessment of investment opportunities abroad. Similar conclusions are drawn in the finance literature that investigates herding in equity investors. Not unlike the oligopoly theory, the reason why investors may choose to follow a trend set by others is due to the perception that other investors have superior knowledge of the investment opportunities (Wermers, 1999). Though we may speculate on the true nature of the different reasons, there is serious empirical evidence suggesting that this phenomenon of herding is something that people are prone to in many different circumstances. This analysis offers

evidence on herding regarding FDI investments at a country level rather than firm level. I set out to investigate several hypotheses; whether direct investors from different countries follow the investments of a world leader, a regional leader, the sum of other regional investments to a host country or whether direct investors are motivated by an increased activity in the foreign portfolio flows in the host country. This is tested while controlling for the main macroeconomic drivers of FDI, the market size and the country openness as well as the physical, institutional and cultural common traits between the two countries in the bilateral pain.

I find supporting evidence that there is herding in FDI outflows. I find that the herding mostly occurs on great distances i.e. when companies don't have familiarity knowledge they resort to imitating the decisions of a world and regional leader. These findings shouldn't be surprising. Companies from a highly developed country, like the US and the UK are usually among the first ones to go into a new and emerging market or in a market where new investment opportunities have arisen, something which other investors from other countries may view as a highly positive signal for the investment quality of a market. I find some evidence that portfolio investors and regional FDI investments herd other FDI investors however this evidence is taken with caution because of data constrains.

1.7.   *Probability of Attracting FDI Flows*

The purpose of this analysis is to quantify the macroeconomic, proximity, institutional and cultural factors in terms of probability of an FDI flow occurring between two countries in order to see if countries can do something to enhance their attractiveness for FDI. In general, FDIs are considered to be very beneficial for the host countries as they promote growth (Daude and Fratzscher, 2008). Using a binary dependant variable method set to be zero if there isn't an FDI relationship between country i and j and 1 if there is a positive relationship,

I show how the aforementioned factors increase or decrease the probability of an FDI relationship occurring between two countries.

Certainly, very little can be done to influence the physical location but there is certainly something to be done about reducing the institutional and cultural distance among countries. I consider a set of macroeconomic, physical, institutional and cultural factors in order to determine if they are significant predictors of the probability of having an FDI relationship with another country. These factors tell us that managers don't feel comfortable investing in places that they aren't familiar with. Countries can use this knowledge to in order to attract more FDI.

1.8. Conclusion

I examine the foreign direct investments from a behavioural finance point of view. I do this by considering two concepts, home bias and herding that are well established in the equity markets literature. I find supporting evidence and show that there is near-home bias in FDI flows. These findings are confirmed on FDI inflows and outflows. The near-home bias that can be observed at a global level is also present when we take a look at different geographical regions, namely continents and countries. Results show that this phenomenon is present in all regions with some individual country variability. Home country bias is also present across time periods and in different country income groups. I further find evidence suggesting that direct investors herd in their investment choices and imitate the investors with perceived advance knowledge of the investments opportunities. Because these investors are world and regional leaders in direct investments other investors follow their investment location choices. Finally, the factors that are used in this thesis to denote physical, cultural and institutional proximity are significant predictors of the probability of two countries having an FDI relationship.

2. Literature Review

2.1. Introduction

This chapter surveys the past work in several fields that are related to the theoretical basis for the empirical analysis in this thesis. It looks into the theories and determinants of FDI flows between countries, home bias and herding in equity markets and the use of binary dependent variable models in FDI literature.

Since the theoretical base for this thesis stems from several different areas of literature ranging from international business and macroeconomics to areas in finance and psychology, the review of literature is done with the specific research questions in this study in mind. I start by looking into a brief overview of the development of the FDI literature since the beginnings in the 1950s and I look into the modern developments in this literature as well as the different geographical or other focuses of the studies. While it is very important for the results to be confirmed at a global level, it is equally important for the data to be segmented according to various criteria in order to obtain generality of the findings as well as cross sectional differences in the findings. The home bias literature section provides an overview of the phenomenon, its determinants and the main studies of home bias in the equity markets. I then move to an overview of the herding literature in equity markets as well as a theoretical link between the FDI literature and the herding phenomenon. Finally, I look into a specific area of FDI namely, studies that use a binary dependant model. These probabilistic models have a very useful application in research questions that have a possibility of a qualitative dependent variable which can be converted in a binary dependent variable. Using these models one could quantify the probability of FDI flows among two countries and what determines this probability. This final analysis has a country policy aspect to it, which is especially important for countries that wish to increase or attract more FDI flows.

2.2.   FDI Literature

Definition of a foreign direct investment

   The OECD defines foreign direct investment as "a category of cross-border investment made by a resident entity in one economy (*the direct investor*) with the objective of establishing a lasting interest in an enterprise (*the direct investment enterprise*) that is resident in an economy other than that of the direct investor" (OECD benchmark definition for FDI, 2008). Since this thesis uses FDI statistics data from the OECD it also follows their benchmark definitions regarding FDI. The lasting interest is recorded both at the time of the initial investment between those two entities as well as at the time of all other subsequent capital transactions. The direct investment enterprises can also be referred to as "foreign affiliates" (subsidiaries, associates, unincorporated business) that are either directly or indirectly owned by the direct investor or their non-resident branches. A direct investor can be classified to any sector of the economy and could be: an individual, group of related individuals, incorporated or unincorporated enterprises, public or private enterprises, group of related enterprises, government bodies, an estate, trust or other social organisations or any combination from the aforementioned entities. In the cases when two enterprises each own 10% or more of each other's voting power both of them are counted as direct investors in the other. The total FDI flows of one country may thus be a positive or a negative value depending on the levels of capital investment in each observed year. The OECD benchmark definition was first issued in 1983 and its aim is to set the world standard for direct investment statistics. It is also fully compatible with the standards and definitions of the International Monetary Fund's (IMF) manual regarding this issue. The OECD benchmark for the data collection provides its member countries with detailed guidance on how the comprehensive breakdowns by partner country and industry activity should be compiled. The statistics on FDI as requested from the OECD member countries should contain data on all

partner countries individually as well as for all major geographic regions and economic zones, currency or monetary organisations. However, since data on geographic regions and zones isn't readily available for many other variables and from other data sources, only sovereign countries can be considered for this thesis. The bilateral data provide very valuable information to researchers to identify and examine at a more detailed level any differences that arise from bilateral comparisons as well as improve the quantitative analysis by providing a large and rich dataset (OECD benchmark, 2008).

The statistics on FDI provided by the OECD relate to the transactions and positions between direct investors and their investment enterprises rather than to the financing and operations of those enterprises. This thesis subsequently also focuses on the FDI corporate decisions and the nature of the choices and not with the profitability of the investments or any measures of the used inputs and the produced outputs by the multinational enterprise. Due to the ever-increasing complexity of the multinational enterprise structure, the OECD rule on the geographic location of the direct investment positions follows a debtor/creditor principle. This means that the geographic allocation is made according to the country of residence of the direct investment enterprise (direct investor) even if the funds are paid or received from another economy. A source of major concern for the definition or analysis of FDI for any data provider is the approach to identifying the immediate and ultimate host/investor countries. At present the OECD requires that its members report on the immediate investing and host countries with additional, supplement data on the ultimate host or investor country where possible.

The lasting interest implies the existence of a long term relationship between the two sides of the direct investment and a significant degree of influence on the management of the acquired enterprise. The current recommended methodology adopted by the OECD whose data are used in this study states that a lasting, direct investment is made when there is an

acquirement of 10% of the voting power of an enterprise by an investor resident in another economy even though there are many arguments in favour of the fact that when it comes to large enterprises, a controlling stake can be achieved by far a lesser percentage of the company stock than 10%. The ever increasing complexity of the multinational enterprises contributes to several issues regarding what can be counted as an FDI. For example, confusion may arise in several situations when: there is a continuation of control (firm A owns firm B in a second economy which in turn owns firm C in a third economy); fellow enterprises (firm A owns firms B and C which are in two different economies) or multiple direct investors (firms A and B from two different economies own controlling interests in firm C in a different economy). The OECD benchmark definition for FDI aims to follow the general criterion of 10% of the voting power in establishing whether each enterprise under consideration is a subsidiary, associate or not relevant in FDI and subsequently if an enterprise is considered to be a subsidiary or an associate it would be considered as FDI.

According to the OECD benchmarks, a subsidiary is a direct investment enterprise in which an investor owns more than 50% of its voting power or where an investor and its subsidiaries combined own more than 50% of the voting power of another enterprise. The associate in a direct investment enterprise is an entity in which an investor owns at least 10% of the voting power and no more than 50% or where an investor and its subsidiaries combined own at least 10% and no more than 50% of the voting power in an enterprise. In a special situation, when an associate, either as an individual or in combination with its subsidiaries own more than 50% of an enterprise, this enterprise is regarded for FDI purposes as an associate of the higher level investor. What is not relevant in FDI is an enterprise in which an investor own less than 10% of its voting power.

The OECD benchmark states that the main financial instrument components of FDI are equity and debt instruments. The equity may include common and preferred shares,

reserves, capital contributions and reinvestment of earnings. The dividends, distributed branch earnings, reinvested earnings and undistributed branch earnings are components of FDI income on equity. The debt instruments include bonds, debentures, commercial paper, promissory notes, non-participating preference shares and other non-equity securities: loans, deposits, trade credit and other accounts payable/receivable. Consequently all cross border positions and transactions related to these instruments between the enterprises that are involved in the FDI relationship are included in FDI flows however positions and transactions in financial derivatives between the two enterprises in the bilateral pair are excluded from FDI.

Historical development of FDI literature

FDI theories originated in the 1960s with the intention to understand the international capital and trade flows after the Second World War on a firm level (Buckey (2002)). There are many ways in which to approach a review on the literature on FDI. A topical review of FDI is done by Agarwal (1980) where theories are grouped together based on some common feature. Moosa (2002) following previous work done by Lizondo (1991) and Agarwal (1980) states that FDI theories can be classified in four main groups according to market structure: theories assuming perfect markets, imperfect market, other theories and theories assuming other variables and recognizes that this classification may have its weaknesses. Authors can be also grouped based on the geographical classification of the FDI flows. Papers often consider only one country's FDI flows with others, or FDI flows to a specific region. It would be best to start with a basic historical development of FDI theory. There are three main theories that explain the motivation behind multinational corporations (MNCs); the monopolistic, oligopolistic and the Dunning's (1980; 1995) eclectic or OLI

(ownership, location, internalisation) paradigm. The theories during the 1960s and 1970s were based on the market structure the firms operate in.

Monopolistic theory

Hymer (1960) and Kindleberger (1969) have developed the monopolistic theory that proposes that firms operate in imperfect market conditions and therefore seek to take advantage of some superiority they have over the firms in the local markets. This is their monopolistic advantage and it can be in anything from the goods markets to an R&D advantage, from better marketing strategy to superior product quality as supported later on by Caves (1971; 1974) as well as a better ability to integrate vertically or horizontally. The monopolistic advantages may also arise through governmental action in the FDI receiving country. For example if the government in trying to protect the domestic production imposes strict trade barriers, it may indirectly stimulate FDI flows. Caves (1971; 1974) argues that firms that achieve horizontal integration are in possession of unique advantages from their competitors because they can really focus on brand development, recognition and protected trademarks. When large domestic firms decide to use their unique R&D and marketing advantage positions in the local markets and expand abroad, they are able to more easily establish their presence as multinationals since other smaller domestic firms in foreign markets do not have the same resources that they have. They use their monopolistic advantage in the local, foreign market as foreign direct investors. The monopolistic advantage also comes to mind when we consider the primary motive for an FDI which is the resource seeking investment. Many MNEs do not have a choice but to invest abroad. The privileged or restricted access to the raw materials and minerals or other resources that can only be found in certain geographic areas supports the monopolistic theory of FDI.

Oligopolistic theory

The oligopolistic theory was introduced and developed by Knickerbocker (1973) and further developed by Kim and Lyn (1987), Caves (1974), Severn and Laurence (1974), and Mansfield, Romeo and Wagner (1979). The main idea behind this theory is that the international direct investment is simply a strategic reaction to an anticipated behaviour by oligopolistic competitors. The studies involving the oligopolistic theory report empirical evidence that firms that operate in an oligopolistic industry setting and strongly react to their competitors' advances and follow their actions in order to replicate them. Thus if home market comprises of two or three firms and if one of these firms decides to start investing in a particular region or country, others will have to follow suit in order to maintain desirability in the eyes of the shareholders. Knickerbocker (1973) analyses the behaviour of US manufacturing firms between 1948 and 1967 and observes that companies, in an attempt to avoid risk (whether it may be from the stock market or the investment decisions) would follow one another into a foreign market. Firms in oligopolistic markets follow their competitors in their FDI decisions. He argues that the firms which engage is mass production and mass markets are the ones most likely to engage in this kind of behaviour. Caves (1971;1974) argues that investments occur from industries that have an oligopolistic structure. His position is understandable since at the time (the 1970s) the truly large companies that would be making foreign direct investments in rather constrained capital markets conditions would probably have been very few per industry. It is much later that this oligopolistic market structure can be overcome by a more competitive one. And it is probably still an oligopolistic structure for some industries like aviation or heavy manufacturing. Caves' contributions are also important for the distinction between the different types of market integration of the firms. Namely, the motives for investment abroad can be simple, to achieve horizontal integration i.e. produce the same product

abroad, in a new market and take advantage of the economies of scale; vertical integration, where the MNE would also branch out in production and expand to new markets with the foreign acquisition and a further diversification of a conglomerate.

Eclectic paradigm

The following decade, 1980s brought a more complex explanation for FDI. The eclectic or ownership; location; internalisation (OLI) paradigm developed by Dunning (1980, 1988), connects the three factors - ownership, location and internalisation by having a simultaneous effect on the international corporate investments' motives. The ownership advantages address the why question, i.e. the fact that the firm has some advantages over the firms on the local markets such as lower costs of production that give it the so called advantages based on ownership. Localisation factors account for the geographical aspects of the international investments and the motives behind particular decisions. The second set of advantages can also be found in the work of Buckley and Casson (1976) as a further clarification of the internalisation theory. Dunning in his paradigm separates them from the internalisation factor. This was a point of much criticism later on from several authors, notably Rugman (1986), Casson 1987, Itaki (1991) and Horaguchi, H. & Toyne, B, (1990). The third group of factors – the internalisation advantages draws on the previous work by Buckley and Casson (2003) and focuses on the firm's choice out of the different ways of market entry to internalise, where the market does not exist or functions poorly so that transactions costs of the external route are high. The eclectic paradigm essentially analyses why and where multinational companies would invest abroad. The multinational company can transfer unique internal knowledge in other markets at low costs by establishing a subsidiary abroad and achieve economics of scale. It chooses locations where it can make use of its economic, political or cultural advantages. The world has undergone drastic

changes during the last two decades (Dunning (2002)). Financial liberalisation efforts started during late 1980's and early 1990's. Researchers have started to account for the liberalisations in capital flows and the changes in the world political maps as well as the impact of globalization. FDI studies during the last two decades try to identify the new factors that impact the FDI flows such as whether low labour costs will shift production towards the emerging and transition markets economies and how does their political instability influence the level of FDI they receive (Bevan and Estrin, (2004)).

Determinants of FDI

Why do firms go abroad and what influences their decisions? These questions have been the focus of most FDI studies that attempt to empirically or qualitatively test the determinants of FDI among countries. Recent work on FDI regardless of the geographical focus of the data feature the GDP and GDP per capita as proxies for the economic pull of an economy and are an important determinants of FDI flows. It is used for both emerging and developed countries [Kinoshita and Campos (2003), Bevan, Esterin (2004), Botrić and Škuflić (2006)]. GDP and GDP per capita are most commonly used as major determinant for FDI flows between two countries. This is due to the fact that FDI is strongly influenced by the size of the markets of the partner countries because FDI flows tend to gravitate towards larger economies.

Recent FDI literature features some measurement for country openness as the second major determinant of FDI flows. Countries that are said to be more 'open' with increased trade flows or portfolio investments would be more likely to engage in FDI. Openness indicators include the country's exports or market capitalisation and cost of borrowing [Botrić and Škuflić (2006), Kinoshita and Campos (2003)]. FDI flows are higher to more open countries because the capital flows towards these countries are easier than

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towards less open countries. Hansen and Rand (2006) analyse the causal links between the FDI and growth in developing countries and find a positive association of FDI and GDP and a causal link from FDI to GDP in both the short and long run. Balasubramanyam,et al. (1996) study the role that FDI plays in the growth process of developing countries with respect to different trade policy regimens. In a cross section of 46 developing countries, they find that the beneficial economic effect of FDI is stronger when for the countries which are also more outwardly open to trade. This means that countries which are more open to trade attract more FDI. Chakrabarti (2001) provides an overview on the main groups of economic determinants which can be found in the literature on FDI determinants literature, conducts a sensitivity analysis and concludes that the influence of many of the used economic variables can be vary varied, aside from the very robust influence of market size expressed through the GDP, the other groups of economic factors such as labour cost, trade barriers, growth rate of GDP, trade deficit, exchange rates and taxes appear very sensitive to small alterations in the analysis. Wu and Li (2008) analyse the impact of trade liberalisation on the trade flows in developing countries. They find that trade liberalisation significantly and positively influences trade flows in the countries. This confirms the significance of openness to trade as a determinant of FDI flows.

Cultural proximity is often assumed through geographical distance or shared border (Galego, Vieira and Vieira, 2004). Although it can be a significant determinant for FDI, the importance of distance may be diluted nowadays, with globalization and as the capital flows now move with fewer barriers. Culture can be approximated in different ways. A very popular proxy for cultural distance between nations is via the cultural dimensions as developed by Hofstede (1980; 1983). Kogut and Sigh (1988) developed an index for cultural distance based on Hofstede's cultural dimensions which is very popular in FDI studies and some international trade flow studies. West and Graham (2004) develop a theory for a linguistic

based cultural measure in which they argue that in addition to the cultural dimensions a shared language should also be added to a cultural measure. It can be concluded that culture influences can be approximated in various ways, through organisational culture (like Hofstede) or through more broad categories such as language or history of a nation. Differences in culture cannot be ignored because they influence differences in investor protection in different countries (Stulz, Williamson, 2003). They also find that country openness reduces the cultural (especially religious) influence that it has on international trade and investments. Culture and egalitarianism are the primary focus in Licht et al. (2011). They focus on what they refer to as a key cultural dimension – egalitarianism, in order to identify what drives international investment. They find that the distance in the countries' stances on egalitarianism has a negative role in investments in the world and suggest that it's a possible explanation for home bias. Some studies focus on the influence that immigrants have on the choice of FDI destination country (Aharoni (1966); Gillespie et al. (1999); Amadi (2004). This influence can also be captured through the effects that the shared spoken language of minority population between two FDI partner countries.

Kirkpatrick et al (2006) point to the need for good country governance and regulation especially when it comes to developing countries. Institutional distance is defined as the extent of similarity or dissimilarity between the regulatory, cognitive, and normative institutions of two countries (Xu and Shenkar, 2002; Kostova, Zaheer, 1999; Kostova, 1996). These studies stress the importance of institutional familiarity on the FDI flows. Institutional similarity may be difficult to capture for a large cross section of countries and like the culture it can also be approximated in various ways. Country-specific governance is also an important factor for doing business in a particular location. Kaufman, Karaay and Materazzi (2009) have developed an elaborate database with six world governance indicators that capture country specific factors of governance: voice and accountability, political stability, government

effectiveness, regulatory quality, rule of law and control of corruption. These kinds of indicators have been used in FDI literature in various forms (Green and Cunningham (1975); Globerman and Shapiro (2002); Bénassy-Quéré, Coupet and Mayer (2007), Habib and Zurawicki (2002); Grande et al. (2009); Boyacigiller (1990)) and they are found to have a stimulating influence on FDI. Klostad and Villanger (2008) study the FDI determinants across different service industries on a wide cross section of countries. They find that institutional quality and democracy plays a big role for FDI and that the absence of this will deter investments below a certain threshold. Clark and Kassimatis (2009) investigate the effects of country default risk as a determinant in FDI inflows to eight Latin American countries from 1986 to 2000. They find supporting evidence that the country default risk is a separate risk from political risk or exchange rate risk and that it adds more to the costliness of doing business abroad. Levis (1979) considers the political situation in a country to be an active determinant in addition to the economic factors of investment flows and focuses on an empirical examination of the relationship between the state of the political stability of a country and its FDI flows.

Investors prefer locations where there is political stability and rule of law and governments work effectively, where the regulatory quality and accountability are high and corruption is under control because that will reduce the perceived costliness of doing business abroad. Institutional distance is linked to the establishment of legitimacy in the host country and the transfer of strategic operations and organisation practices from the parent firm to the subsidiary abroad. Being a member of the same economic organisation or having similar legal systems play a significant role in the investment decisions. Such similarities breed familiarity bias (Brainard, 1997) which makes it easier for corporate managers to make international investments if the destination markets have similar structure as the home market. Bilateral tax treaties may explain what drives investors to a particular location (Errunza and Senbet, 1981;

di Giovanni, 2003). Van de Laar and De Neubourg (2007) investigate the role of emotions among the managers of Dutch firms and their FDI decisions. They conduct a survey analysis and find that direct investment decisions are frequently affected by the managers' personal preferences towards a particular investment destination. Guiso et al. (2009) find that bilateral trust between citizens of two countries will likely enhance cooperation among them because this trust creates a perception of a safe investment opportunity and an illusion of a reduced risk. Their survey results (a rank index of the level of trustworthiness of managers from different countries) show that there is a home bias effect in the trust in that managers are more likely to trust their fellow countrymen than those from abroad.

In the general FDI literature, few categories of factors emerge as important when considering FDI, such as general macroeconomic influences in terms of GDP and country openness, and various political, socio-cultural or institutional determinants which help capture the finer points of the FDI flow patterns across countries.

Geographical focus of FDI studies

In this thesis, I consider a very wide country group that enables me to generalise the findings by considering both the broad and segmented picture, which might not be otherwise possible in a geographically narrow-focused study. Most FDI studies are conducted on a selective geographical scope, often from a single-country perspective and this single country is very frequently the US (Benito and Gripsurd (1992); Grosse and Travino (1996); Grosse and Goldberg (1991); Green and Cunningham (1975); Sethi et al., 2003; Grande et al., 2009; Boyacigiller (1990)). Other FDI studies are conducted for specific countries or regions such as Wezel (2003), analysing the determinants of German FDI inflows in Latin America, Hara and Razafimahefa (2005) analysing Japanese FDI inflows. The attention to the interest that the immigrants' homeland may play in the FDI outflows from one country was raised by

Aharoni (1966) who analysed the US FDIs made to Israel. Gillespie et al. (1999) further study the diaspora communities in the US and the US direct investment abroad for four large US immigrant communities.

The EU and the EU accession countries are a geographic area of particular interest for FDI studies. Nitsch (2000) considers a comparison of the amount of trade between countries within the EU and countries of the EU with an outside EU partner country with similar size and proximity and finds that the trade within the EU countries is about ten times higher suggesting that the home bias based on national borders is still very influential and that countries rely on higher cultural and institutional familiarity. Janicki and Wunnava (2004) analyse the FDI determinants in the EU accession countries and their particularities. The Central and East European Countries (CEEC) are the geographical focus of the study of FDI determinants in Bevan and Esterin (2004), while South-East European countries are the geographical focus in Bandelj (2002) and Botric and Skufic (2005).

Psychic Distance

The collective influence that a certain social or cultural environment has on the perceptions and subsequent decisions of a manager (or any person) is the subject of a management and marketing literature strand that uses the term psychic distance. The theoretical background for psychic distance is set by Johanson and Wiedersheim-Paul (1975) and Johanson and Vahlne (1977). They introduce the concept of psychic distance in the context of the extension of firm activities to new markets. Psychic distance is defined as "…factors preventing or disturbing the flows of information between firm and market. Examples of such factors are differences in language, culture, political systems, level of education, level of industrial development etc…" (Johanson and Wiedersheim-Paul, 1975 p. 308). They develop a model for the internationalisation process of the firm with focuses on its

gradual acquisition, integration and use of knowledge about foreign markets. They start with the assumption that internationalisation is the consequence of a series of incremental decisions and the most important obstacle to it is the lack of knowledge and resources. The perceived risks of investments decrease gradually through increased exposure to a foreign market and thus expect a stepwise extension of operations. They also argue that psychic distance is not constant and it changes over time as communication systems develop and trade and other social exchange build up. Psychic distance isn't the only important factor but market size is crucial one to consider as well. This topic is revisited by Johanson and Vahlne (2009) where they also discuss the importance of trust and commitment building. Zhu and Yang (2009) analyse the role of psychic distance in the spreading of financial crises in four cases. They represent the psychic distance through dimensions that include language, geography, economic membership and development level. Psychic distance is used in marketing studies (Sousa and Bradley, 2008) to assess the differences between countries. Brewer (2007) systematically analyses the psychic distance aspects and proposes that national indicators of psychic distance should include: commercial ties (trade or foreign investment), political, historical, geographical, social (cultural) information and development (immigration, corruption etc.) ties. He then calculates a psychic distance index between around 30 countries from these aspects. Having a composite index of all of these factors may well capture the negative impact that human behaviour has on cross-country flows of any kind but it is also very necessary to be aware which of these factors contribute more or less and in which manner if we wish to draw conclusions on what determines the observed patterns in international flows. If it's true that people prefer to invest in familiar places and that this creates a certain near-home bias, based on both geographical location and culture and organisation one would need to identify these factors separately not as a joint index.

Some studies use cultural distance (especially as defined by Hofstede (1980)) as the only representative of the manager's psychic distance in the FDI location choice (Bertrand et al., 2004). The culture distance as defined by Hofstede and represented through the four dimensions is a sociological description of different attitudes between people. It does make a difference if the managers are used to an environment with different attitudes of masculinity vs. femininity for example but there are other aspects of cultural similarity between nations which aren't depicted by Hofstede's cultural dimensions such as speaking the same language or sharing history with another country. These aspects will make the environment of a country more familiar to a corporate manager but they will not necessarily decrease the cultural distance index between two nations. Let us consider the colonial links between countries for example. In terms of the cultural distance as a measure for the psychic distance that the manager will exhibit, a UK manager isn't likely to be very culturally proximate to an African manager or employees in one of the Commonwealth nations according to Hofstede's cultural dimensions. However, a UK manager is far more likely to feel familiar to a former colonial African nation than let's say a former French colonial African nation. Odds are that according to a cultural distance measure, the UK manager would be culturally equidistant from any African nation but a UK manager would prefer to invest in a former UK colony rather then a former French colony. This same notion can be extended to shared language. Even though these countries would be culturally different, they do share an official language which would increase the familiarity and with it the near-home bias that a UK manager would exhibit in the choice of the location to invest abroad.

A range of psychic distance stimuli have been used in large datasets as significant predictors of trade flows (Dow and Karunaratna, 2006). I build the analysis of near-home bias in FDI on a similar understanding. Corporate managers prefer to invest in foreign destinations near home not only in terms of physical distance, but also in terms of institutional and

geographical distance. Psychic distance explains the factors that influence and help shape the manager's decision to invest in familiar places. Near-home bias is the empirical manifestation of these predisposition factors, it is what can be observed and empirically tested in FDI flows. It puts the familiarity preferences which are rooted in the psychic distance that corporate managers have in a geographical context based on the location of the investor and the investment destination. This geographical context and various institutional and cultural familiarity factors contribute to a home country bias in investments.

2.3.   *Home Bias Literature*

The term home bias (French & Poterba (1991); Lewis (1999)) is used in the context of portfolio investments to describe the tendency that investors overweight their domestic investments thus not taking the full advantage of international diversification. French and Poterba (1991) form their argument through the fact that different nations have differences in fortunes and returns. This should drive investors from any part of the world to seek to diversify their portfolios internationally in order to use the benefits of financial diversification which have been known and recognised for a long time. In spite of this they observe that most investors hold nearly all of their wealth in domestic assets. They do consider that international barriers to trade could pose a limit to international diversification however in their sample they cannot observe that such barriers are in place or that they impede international investment. Another impediment to international investment may be the increased taxation in foreign markets however in this case as well they do not observe that there are significant differences in the cross border taxation burden. They also cannot explain the home bias through consideration of transaction costs. In another core home bias study, Lewis (1999) finds a puzzling prevalence of home bias in equity markets and international consumption. In an attempt to test whether equity portfolio home bias can explain the international

consumption home bias she finds that even if equity home bias can be eliminated and can no longer be measured, consumption home bias will continue to exist.

Feldstein and Horioka (1980) study whether the capital flows among countries equalise the yield for investors or whether the saving remains within the same country and doesn't flow abroad. If the capital is perfectly immobile then the domestic savings will be equal to the domestic investment. Conversely, if there is indeed capital mobility in the international markets then the investors would seek to take advantage of the best investment interest rates and therefore the domestic savings and the domestic investment would no longer be the same. This close link between the amount of domestic saving and domestic investment is known as the Feldstein-Horioka puzzle and is one of the six puzzles in international economics and finance identified by Rogoff and Obstfeld (2001) alongside with the home bias in equity and international trade puzzle. Feldstein and Horioka (1980) used data from the OECD in the period from 1960-1974 and estimate a model where the dependent variable is the ratio of the gross domestic investment and the gross domestic product. The independent variable is the ratio of domestic savings and gross domestic product. They find that the coefficient (beta) of this ratio is always very high (near one). They conclude that because barriers to capital flows impede the flow of capital among countries, the domestic saving is largely converted to domestic investment instead of the expected preference for the highest yield. The capital markets have significantly become liberalised in the past two-three decades and consequently the effects of the Felstein -Horika phenomenon have been found to have diminished (Jansen, 2000) but haven't disappeared fully. Caporale et al. (2005) find that empirical evidence in support of the Feldstein and Horioka (1980) conclusion. They state that even in the presence of perfectly mobile capital markets, a high savings-investment correlation can still arise because of things like productivity shocks in the domestic and foreign markets. The unexplained positive correlation between domestic savings and

investment even in a situation of relatively unobstructed capital markets offers some support to the home bias phenomenon claims that people prefer to invest locally or nearby. Feldstein and Horioka (1980) also conclude that much of the direct investments in the world are made to enhance the trade positions or to take advantage of special knowledge and as such these investments would not be sensitive to the differences in interest rates.

The past two decades have seen much relaxation of the barriers in capital flows (Artis, Hofmann, 2006). They find that the home bias has declined with the increase of shared international consumption risk. Gordon and Bovenberg (1996) analyse the evidence on capital immobility and the lack of portfolio diversification in international flows. They develop a model of asymmetric information between countries to help rationalise the observed high correlation between domestic saving and investment. A case has been made that globalization removes investment obstacles which leads to greater financial efficiency in the world in which case we should observe that investors are internationally diversified (Stulz, 2005). Investors can diversify their portfolios by holding assets in many foreign countries. They don't often do this, however. Karoyi and Stulz (2002) observe that the home bias is still substantial in the international markets. They argue that the existing empirical evidence links the country risk premium with its covariance with the world market portfolio. The theoretical asset pricing literature and the models it uses fail to explain the portfolio holdings of investors, the equity flows and the cross country correlation properties. They find that the home bias effect has an increasing influence on local asset prices.

The benefits of the liberalisation of the capital markets should also be expected in the world of FDI. If it's easier to invest we should, similarly to the equity markets, observe less influence of the cultural, institutional and other familiarity factors which are still preset in investments of any kind. Stulz (2005) however, finds that the country irrelevance proposition of international portfolio diversification theory doesn't hold and that a lot of the investments

take place at home or among rich countries. He also finds that home bias does diminish over time with the increased capital mobility in the international markets. Ke et al. (2009) investigate home bias in international investment decisions using US data on mutual fund holdings and find strong evidence that US investors decidedly prefer to invest heavily in domestic stocks. They also point out that the real degree of home bias in equity markets (especially in the US) is probably more serious that what is captured in the literature. Cumming and Dai (2010) investigate local bias in US venture capital investments and find that venture capitalists exhibit strong bias in their investment decisions; they tend to gravitate closer to their home state. Wolf (2000) looks into the premise that if trade barriers were the sole culprit for home bias, it should disappear once borders are removed. He finds that home bias persists even within national states of the U.S. means that there are other forces behind home bias besides the intuitive barriers of trade explanation. Grinblatt (2001) documents the tendency of investors in Finnish firms to buy, hold and sell stocks of firms which are located near to the investors. He differentiates between the level of sophistication of the investors and concludes that the influence of culture, language and distance is more prominent among investors who are less savvy rather than the more knowledgeable investors. The home bias phenomenon can be observed in almost all types of markets and any level of analysis (within a country or at an international level). Tesar and Verner (1995) study the link between home bias and high turnover in international portfolio investment in 5 OECD countries. They find strong home bias in the national portfolios despite the benefits of international diversification. They also find that the structure of the portfolios doesn't simply show a risk diversification but it reflects other factors as well which contribute to the observed home bias. They conclude that the high turnover that is present for some securities has little bearing on the net investment positions which means that high stock turnover doesn't explain the home bias puzzle. Coval and Moskowitz (1999) show that there is a home bias at home, investigating

home bias in the US markets. They find that US investment managers exhibit "a strong preference for locally headquartered firms". They also find that asymmetric information makes geographic proximity a very important factor in determining the investor portfolio choices. They use common language (to also approximate historical and colonial familiarity) and listing on the LSE, measurements for market depth (GDP) and transaction costs. In a related study, Coval and Moskowitz (2001) investigate the geography of investment and mutual fund performance. They find that there is a very strong link between the fund managers that earn abnormal returns and investments in firms that are nearby. These managers tend to overinvest in close-by firms. This trading superiority is consistent with managers having a superior knowledge for local firms.

Determinants of home bias

Home bias literature states that the international investors do not hold the world market portfolio. Kang and Stulz (1997) investigate the reasons for home bias. They perform their analysis on stock ownership of Japanese firms by non-Japanese investors over a long period from 1975 to 1991. The basic premise of international diversification is that both domestic and international investors will tilt their portfolio holdings towards stocks with the highest expected returns. The study that Kang and Stulz (1997) performed did not find supporting evidence for that claim. They observe that foreign investors hold more stocks in the 'more visible' Japanese firms, firms with higher size, higher turnovers etc., consistent with the view that international investors flock towards more internationally known firms. Cultural influences are the focus on many studies on what determines home bias as well as FDI. Portes and Rey (2005) investigate the determinants of international (cross-border) equity flows. They perform their analysis on bilateral cross border equity flows between 14 countries during an 8 year period panel data. They use a gravity type model which they find explains

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both international transactions in financial assets as well as the trade flows of goods. As means of capturing the asymmetric information or transaction costs they include the physical distance, telephone calls traffic, bank branches, trading hours overlap between the countries or degree or insider trading. They find weak evidence of diversification motive in asset trading at yearly data frequency. They do find strong evidence that the information variables greatly improve the explanatory power of their gravity type model. They find that international markets aren't frictionless but rather strongly prone to information asymmetries or familiarity effects. The findings of this study have a great implication for the home bias literature in that they expand it to international flows in both the financial assets investments and international trade side of the flows. These findings imply that home bias could be expected to be present in FDI flows as well. The different countries have different access and attitudes to information sets, something that greatly influences their investment decisions and patterns. All this has severe implications in the international capital markets.

Anderson et al (2011) consider the widely cited cultural dimensions developed by Hofstede (1980) in their cross-sectionally wide study of home bias in institutionally managed portfolios highlighting the importance of the cultural determinants in any home bias study. Geographical proximity and cultural similarities are mentioned in a number of home bias studies in different areas (Rauch, 1999). Distance in both culture and geography yield in bank lending (Mian, 2006) because it makes the lending informationally difficult. The greater distance makes bilateral negotiations between braches and headquarters difficult to overcome. He finds that controls for bank size, legal institutions, risk preferences and unobserved borrower heterogeneity don't explain their findings but that distance remains a detrimental factor in the unequal investment.

The factor that the immigration presents to home bias is considered in several studies. Foad (2008) captures the effects of immigration population in investing. He finds that inward

migration is positively correlated with increased foreign equity positions and reduced home bias. Increased migration also increases the information flows which is consistent with the expectation that the asymmetric information findings in home bias literature. White (2007) uses a gravity model specification to investigate the effects of immigration in bilateral trade. The familiarity effect is measured by the number of immigrants/emigrants of country i living in country j relative to the total country's population. He uses a shared border, language and distance to measure home bias. Similarly, Massa and Simonov (2004) analyse familiarity bias in the investors' choices in portfolio investments. They measure the home bias by using variables for geographic proximity and holding period, education level and immigration status of the investors. The immigrants' effects on investments abroad can be captured through any shared language that a minority population group of one country shares with another country.

Seasholes and Zhu (2010) find that individual investors tilt their portfolios towards locally headquartered firms i.e. more familiar investment opportunities. They conclude that individuals do not help incorporate information into stock prices. Licht et al (2011) suggest that the influence of egalitarianism in the international investments may help explain home bias. They use data on cross national investment flows of bond and equity instruments, syndicated loans and mergers and acquisitions and control for many of the known factors that influence international flows such as distance, language, legal system or culture. They find that egalitarianism maintains influence on the cross border flows even after controlling for these factors. The empirical analysis in Amadi (2004) using data on international assets holdings for over 30 countries shows that familiarity factors such as a common language, trade and immigrant links have significant influence which would support an information-based explanation for equity home bias. These familiarity factors should also be applied to decision making on a corporate level and with regard to different kinds of investments, such as direct investments. Poor country governance (institutional, political etc.) is listed a great

obstacle to investments in a particular country (Stulz, 2005) and a contributor to the observed home country bias. Dahlquist et al (2003) also find a close relation between home bias and poor country governance in portfolios held by investors. Kho et al. (2009) investigate home bias using firm level data on US and Korean foreign portfolio investors and direct investors. They also maintain that the FDI investments depend largely on good country governance as well as that the average home country bias has fallen in the decade between 1994 and 2004. In this thesis the focus is to test whether FDI investors are prone to invest in the more familiar places in a cultural, institutional and geographical sense. Chan, Covrig and Ng (2005) find familiarity bias variables (physical distance, common language) have a significant effect in domestic and foreign bias (domestic investors over-weigh local investments, foreign investors under-weigh overseas investments). Huberman (2001) using data on US Regional Bell Operating Companies finds compelling evidence that familiarity breeds investment and that people invest in the familiar (the company that they work in) while often ignoring the principles of portfolio theory. Massa and Simonov (2006) analyse the familiarity effect in hedging and portfolio choice. Using a Swedish dataset, they observe that investors do not hedge but rather invest in stocks which are more familiar to them based on some demographic characteristics. They consider that this familiarity shouldn't be considered as a behavioural bias but rather as utilisation of information. This is because they consider that this familiarity will yield the abnormal returns. Similarly, Li (2004) concludes that home bias may be a misleading term because it drives researchers to interpret cross border investments as biased even though this may well be an optimal asset pricing investment for the investors who consider all the relevant country specific risks and costs of investment. Wei (1996) finds that countries show home bias in international trade using OECD countries; they 'stubbornly' import more from themselves than from countries which are otherwise similar to them and after controlling for their size and distance as well as a possible linguistic connection.

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Faruquee et al. (2004) study the determinants behind the home bias phenomenon in international portfolio diversification. They find that market size, transaction cost, and information asymmetry are major determinants of cross-border portfolio choice.

Home bias is a well-spread phenomenon across many different types of markets. The main determinants used to capture this effect are factors that increase the investors' familiarity of the investment destination. These factors have to do with aspects of social, political, cultural and geographical familiarity.

Possible explanations for home bias

The literature on home bias offers few explanations (Fidora et al. (2007)) with respect to the reasons and causes for this phenomenon. The *most common reason* is asymmetric information and/or transaction costs (Ahearne et al, 2004). Investors find it more difficult to gather information on more 'distant' investment possibilities. Because of different factors such as distance, language and political/cultural barriers; they tend to disregard distant investments [Van Nieuwerburgh and Veldkamp (2009)]. Liljeblom and Löflund (2005) suggest other possible explanations for home bias besides asymmetric information to be transaction costs, differences in taxation or exchange rate and capital market regulation, and other restrictions for international investments. Cooper and Kaplanis (1994) investigate home bias in equity portfolios and test to see whether the home bias is caused by investors who are trying to hedge from inflation risk. They find that the observed home bias cannot be explained through inflation hedging or through observable costs of international investment.

Van Nieuwerburgh and Veldkamp (2009) approach asymmetric information by stating that even if information is tradable and available, home bias would not completely disappear as one would expect because if there's a slight chance that investors will know a little bit more about their home assets they will continue to be less informed about foreign investments

and they invest more in home assets relative to their international holdings. Brennan and Cao (1997) develop a model of international portfolio flows that relies on informational differences between foreign and domestic investors. They find evidence of that the portfolio flows are associated with returns on the national market, consistent with the asymmetric information hypothesis but they also point out that their findings explain a small proportion of the variance of international equity portfolio flows and that further efforts are necessary in understanding their determinants. This finding supports the claim that though important, asymmetric information isn't able to fully explain what drives capital flows. Asymmetric information and the degree of financial market development have a strong explanatory power in Berkel (2004). Bertaut and Kole (2004) also show that the cross border investments tend to favour countries with close political and regional ties. Suh (2001) offers an insightful explanation for home bias due to asymmetric information by analysing the analysts' recommendations of stocks from the Economist's quarterly portfolio pole. Asymmetric information is at the root of the findings in Coval and Moskowitz (2001) who investigate the geography of investment of mutual funds. They find that investors hold local securities and also earn abnormal returns because they have the unique opportunity to enquire in person about these local securities.

The *second reason* for home bias, transaction costs, means that investors would avoid investing abroad because it's too costly. Other empirical studies on this have shown however, that transaction costs cannot fully explain the home bias. French and Poterba (1991) identify several possible reasons that could affect and impede international investments, such as taxation and other transaction costs and barriers to trade but find that they cannot explain home bias through these factors. Portes and Rey (2005) provide a gravity model for transactions in financial assets that works at least as well as it does for international trade. Their results show that transaction costs do not have a pivotal role in explaining home bias

but rather the information asymmetry and a 'familiarity effect' (distance, phone costs, banks headquartered in the country etc.) do. Ahearne, Griever & Warnock, (2004) analyse cross-listed companies on the US market and find that that cross-listing reduces home bias due to lowered transaction costs. Cooper and Kaplanis (1994) use direct and observable costs of international investments in order to explain the observed home bias but find that they are insufficient to explain the level of observed home bias in the international equity markets. Tesar and Verner (1995) find transaction costs cannot be the reason for the observed reluctance of investors to diversify internationally.

A *third reason* for home bias is analysed by Wincoop and Warnock (2008) who state that the key link between the home bias in the two markets is the real-exchange rate risk. Schoenmaker and Bosch (2008) show that the arrival of the Euro has diminished the home bias in the bond markets in Europe and find that indeed the home bias has declined and that investors have shifted their investments from predominantly the home markets to the markets in the EMU. This shows that economic organisations play a significant role in the investment decisions. Similarity of the markets brought on by this type of unions plays a big role in familiarity bias as found in Brainard (1997), where firms prefer to take up on international investing if the destination markets have similar structure as the home market.

2.4. Herding literature

Herding strands of literature

Herding is another very important phenomenon which is well documented in the equity markets literature but rarely associated with corporate decision making. Scharfstein and Stein (1990) examine different contexts which can lead to heard behaviour in investment. They find that herding can arise from a rational attempt of managers to enhance their reputation as decision makers (reputational herding); they also find that one motivation that leads to herd behaviour is to share the blame for judgement errors in their decisions because essentially, it's

safer not to stand alone. Managers may be less prone to herd if their compensations were dependent on the actual not relative assessment of their work. This paper by Scharfstein and Stein (1990) finds that because decision making in firms is prone to judgement error by various-level managers it would better serve the firms if investment decisions were made in a group i.e. as committee decisions in order to avoid herding because managers wish to 'share the blame'.

Devenow and Welch (1996) review herding and the different contexts in which we can discuss it, and classify it in three broad groups: payoff and informational externalities and reputational models. Payoff externalities models show that the payoffs to one agent increase the number of other agents adopting the same action in a manner of adopting a market convention. The information cascades are considered as the most general explanation of herding and it applies to the case when agents herd because others' actions rather than publicly available information is available. Reputational herding can be caused by principal-agent problems. They adopt the view of Sharfstein and Stein (1990) that managers are capable of completely ignoring private information to avoid being revealed as low-ability. Davenow and Welch (1996) also point out that a major issue in the literature with herding models is the lack of serious empirical evidence because it's difficult to capture and because of data shortcomings.

There are several reasons why herding in equity markets may occur according to Wermers, (1999); reputational risk – managers may disregard their own personal opinion in order to go with the crowd mentality; investors may act in the same way because they get their data from the same sources; investors may get their information from previous trades of what they consider to be more experienced investors; due to aversion to risk and low liquidity they may limit their investment choices; newsletter analysts tend to herd and that may be followed by the investors.

Hirshleifer and Teoh (2003) also review evidence on herd behaviour from different perspectives: payoff and reputational interactions, social learning and informational cascades in capital markets. They review both rational and imperfectly rational theories of behavioural convergence and conclude that most of the herding in the capital markets is likely to involve a mixture of all of these effects. Levy (2004) finds that decision makers who are strongly motivated by reputation concerns tend not to herd but to contradict public information such as others' recommendations. In general, finding empirical evidence of herd behaviour for any reason is difficult (Hirshleifer and Teoh, 2003) largely due to its intangible nature. This classification of herding into broad groups that deal with payoffs, informational cascades and reputational herding is also supported in Prast (2000). It is interesting to note that most studies consider herding in a rational context. Shiller (1995) discusses what determines the volatility of mass behaviour. He argues that information cascades appear to be very important in explaining herding across different groups and time.

Herding is likely to occur in various fields of financial markets and with all kinds of economic agents (Bernhart et is al. 2006). The likelihood to herd is also very present on different levels and economic agents may choose to follow a leader in their group of interest for different reasons such as uncertainty whether their information is correct or inability to draw a conclusion due to lack of information (Graham, 1999). Having in mind that herding occurs in all areas of the financial markets, whether they may be domestic or international, it isn't unreasonable to expect that there might be herding when it comes to direct international investments, at a corporate decision-making level. In a seminal paper, Lakonishok, Shleifer and Vishny (1992) propose a model for measuring herding that is subsequently adopted by numerous other studies. The proposed model consists of calculating the distance between the actual investments from a theoretical benchmark which is a very intuitive way to measure

herding. In the context of FDI an approach to herding could be in the form of a distance in investing from a leader as a benchmark.

Herding in equity markets

Imitation and mimicry are among the most basic of instincts (Devenow and Welch, 1996). Oberlechner (2004) conducts survey research of investors in the foreign exchange markets and concludes that contrary to many theoretical finance postulates, much of the conducted investing is heavily dependent on following news outlets and other investors' reactions. He analysed the human psychology among various investors in the foreign exchange markets and found that all aspects of the trading process are heavily influenced by the personal psychology of the market participants. He observes that the 'traditional notions that market participants are rational and the foreign exchange market is efficient have to be supplemented by a more complex understanding of psychological and social market processes'.

Herding is defined as a group of investors trading in the same direction over a period of time (Nofsinger, Sias, 1999) or the tendency to buy and sell the same stocks in a quarter (Lakonishok et al. (1992); Grinblatt et al., (1995)). Dawenov and Welch (1996) state that herding can be considered from two perspectives: rational and non-rational. The non-rational view on investor psychology considers that economic agents follow each other blindly without rational analysis of their decisions. On the other hand, not all herd behaviour can be classified as irrational in its motives. The rational view centres on externalities, optimal decisions are distorted based on information difficulties or incentive issues. Thus economic agents may find it easier to follow and rely on the decisions of the more knowledgeable members in the markets whose market information can be assumed to be both superior and reliable. The efficient market hypothesis states that investors adapt to the provided

information regarding a financial asset and proceed to take advantage of good investment opportunities. Therefore what may appear as herd behaviour could simply be a lot of investors after the same investment opportunity because it is simply the best investment decision and not because they are actually following other investors. This is something that should be resolved through suitable empirical analysis. The theoretical background on whether certain herding actions can be viewed as rational or irrational and whether some rational herd behaviour is justified is debatable and subject of ongoing research.

It has been pointed out that herding may occur contemporaneously and over a period of time. Herding has been most frequently considered as a phenomenon that occurs over a period of time, however it is possible for a group of investors to buy or sell a stock at the same time (Choi and Sias, 2009). I consider both cases because I have annual data; it is possible for direct investors to herd during the same year as well as over time. What we know about herding comes from the equity markets, and it is not uncommon in international investment flows, especially since the late 90s (Choe, Kho & Stulz, 1999). Herding is associated with many economic activities (Graham, 1999) such as investment recommendations, price behaviour of IPOs, mutual fund investing, fads and customs etc. This thesis contributes to the herding literature by examining herding in the context of foreign direct investments.

In spite of herding, international investment is always influenced by home bias and the investors' preference for the more familiar surroundings (Ackert et al. 2005). Grinblatt and Keloharju (2001) find that investors are more likely to hold, buy, and sell the stocks of Finnish firms that are located close to the investor, that communicate in the investor's native tongue, and that have chief executives of the same cultural background. They find that the influence of distance, language, and culture is less prominent among the most investment-savvy institutions than among both households and less savvy institutions. Feng and

Seasholes (2004) find that there is significant correlated trading behaviour of stock market investors especially when it comes to correlated buying and selling within a specific geographic region.

Clement and Tse (2005) analyse herding behaviour among financial analysts and find that although it has many aspects, it is present among analysts on many levels i.e. in different forms. This implies that herding is likely present among all kinds of investors. Li, Rhee and Wang (2009) find that better-informed institutional investors exhibit a more intense herding behaviour than individual investors, which indicates that institutions tend to trade more selectively, whereas less-informed individuals tend to allocate their investments more evenly across stocks. This could be due to the sophistication level of investors but in any case herding among investors is a strong presence and should be expected to be present to some degree with all types of investors regardless of the nature of the investment (short or long). Agarwaal, Li and Rhee (2007) investigate the herding behaviour of domestic and foreign investors in the Indonesian stock market and they find that both kinds of investors tend to herd with the foreign ones conforming more to the domestic ones. Muradoglu and Salamouris (2010) investigate and measure the effect that herding behaviour has on the accuracy of the analysts forecasts in the UK in a period from 1990 to 2002. They find that the subsequent analysts are more prone to herding which is consistent with the equity investments herding observed for mutual fund investors. They also find that there is a strong positive correlation between forecasting accuracy and herding.

Herding and foreign direct investments

FDI hasn't been a part of any herding studies thus far. Herding studies show that economic agents in all areas of the financial markets are susceptible to such tendencies even when it comes to more long-term decisions such as direct investments abroad. Modern FDI

theory suggests that the MNEs develop abroad in order to continue growing outside of the home market or as a response to market imperfections (Rugman, 1981) in the goods and factor markets (like natural resources dependent companies). In FDI theory such expectation to invest abroad and that investors could possibly imitate each others' decisions is suggested with the oligopolistic theory. The main idea behind this theory is that the international direct investment is simply a strategic reaction to an anticipated behaviour by oligopolistic competitors. The oligopolistic reaction is defined as: the decision of one firm to invest overseas raises competing firms' incentives to invest in the same country (Head, Mayer, Ries, 2002). This study is also the only FDI study that contains a reference to herding papers (Banerjee, 1992; Bikhchandani et al. (1998)) without explicitly connecting the oligopoly and herding theories. They confirm the intuitive expectation that the basic elements of the oligopoly theory (oligopoly, uncertainty and risk aversion) can be combined to generate 'follow the leader' investment behaviour.

As mentioned earlier, the oligopolistic theory was introduced by Knickerbocker (1973) and further developed by Kim and Lyn (1987), Caves (1974), Severn and Laurence (1974), and Mansfield, Romeo and Wagner (1979). Knickerbocker (1973) very intuitively observes that large firms from the manufacturing industries are very likely to engage in the imitation of investment decisions in order to reduce risk and maintain competitiveness. His analysis is very reminiscent of the herding studies except this theory hadn't been developed at the time when he was writing his study. Caves (1971) considered MNEs to operate in an oligopolistic market which encourages them to differentiate their products. They report empirical evidence that firms that operate in an oligopolistic industry setting strongly react to their competitors' advances and follow their actions in order to replicate them. Thus if home market comprises of two or three firms and if one of these firms decides to start investing in a particular region or country, others will have to follow suit in order to

maintain desirability in the eyes of the shareholders. Firms in oligopolistic markets follow their competitors in their FDI decisions. The theoretical connection between two seemingly unrelated theories, an oligopolistic theory in FDI and herding theory in finance is obvious and straightforward. This is an unexplored gap in the literature which will bring together two seemingly different research areas. Following the notion of oligopolistic reaction, it may be the case that it's not only that investors follow companies from the same country into another but it may be that the direct investors from one country are following the actions of their competitors from different countries and reacting to that. As the OECD benchmark definition of FDI (2008) states, there is an increased complexity of the structures of MNEs in the world which creates delicate situations for what constitutes an FDI. As previously discussed at the beginning of this chapter, it may be that an enterprise in one country is owned by two enterprises from two different countries with controlling interests high enough for both to constitute an FDI. With this in mind, it is reasonable to assume and test whether direct investments outflows from one country to another are stimulated by the total direct investments to the host country by the regional neighbourhood.

FDI and Equity Portfolio Flows

The link between foreign direct investment and foreign portfolio investment is discussed by Razin and Sadka (2007) who state that it becomes more beneficial for a company to make a direct investment rather than a portfolio investment abroad at the moment when the net present value of a direct investment is greater than the net present value of a foreign portfolio investment. The reason for this type of distinction is to explain the difference between two kinds of international investments. The problem with this definition of FDI and FPI is that in reality these two types of investments aren't likely to be closely related due to the fact that the motives and types of investors who make these investments are different. According to the

definition from the data providers (World Bank) the PEI include net inflows from equity securities other than those recorded as direct investment and including shares, stocks, depository receipts (American or global), and direct purchases of shares in local stock markets by foreign investors. The data like the data on direct investment are taken from the balance of payments. The direct investment occurs when there is an acquisition of a controlling interest (10% or more of the voting power).

The portfolio investments have a speculative aspect and a temporary nature and would typically be conducted by equity investors who are solely motivated by profitability and diversification. The direct investments would be conducted by corporate managers who don't normally also make portfolio equity investments home or abroad. But the fact that both of these kinds of investments have an international aspect to them makes them naturally connected. Levine (2001) examines the impact that the international financial liberalisation will have on economic growth. He finds that liberalising restrictions on international portfolio flows will enhance the stock market liquidity which in turn will accelerate economic growth through the increased productivity growth.

The portfolio flows are theoretically linked to FDIs even though portfolio investments are seldom analysed together with FDI. Durham (2004) examines the effects of FDI and foreign portfolio equity investments on the economic growth and does not find strong evidence of these two economic categories on growth although the study doesn't analyse the co-influence of these two variables among themselves. Razin and Sadka (2007) and Razin and Kirabaeva (2010) give a theoretical overview on the difference in decisions when it comes to FDI and portfolio investments and conclude that when the investment choices come to a point when the return rate of the direct investment is higher than the portfolio one the investors will in this case prefer to make direct investments. However in reality, the types of investors that will be interested in either of the two kinds of investments are very different because FDIs are

made to expand business and on a corporate level whereas PEIs are made in order for the investor to make a profit. When it comes to foreign portfolio investments, Poshkwale and Thapa (2009) find that the quality of institutions, the better law enforcement and better general investment profile appear to attract more foreign portfolio investments. This can also be the case with bilateral FDI flows - larger foreign portfolio investments could attract more direct investors. While it is generally widely believed that poor corporate governance and corruption does not have a positive influence on FDI flows, Li (2005) shows that this expectation doesn't deter FDI flows to China which leaves room for investigation into other factors that might influence FDI flows counter to the expectation in some regions. Amiram (2009) studies the effect that information availability has on decision-making with respect to foreign portfolio flows. He finds that international accounting standards play a big role in the investors' decisions to invest somewhere because he argues these investors can only rely on information that's provided by the foreign companies and it is easiest to follow the international standards. These familiarity effects can also be captured through the institutional familiarity that a shared membership to an international organisation brings. He also finds that corruption has a negative effect on FPI. Evans (2002) discusses the policy aspects regarding both FDI and FPI. She finds that both kinds of investments have economic benefits for an economy and that the two can enhance these benefits. A further investigation on the relationship between FPI and FDI is necessary.

The limited scope of studies that consider international portfolio flows and direct investments shows a need for a closer examination of these two categories. There may be some question about the direction of the relationship between portfolio and direct investments with respect to which comes first in a market. This thesis focuses on the analysis of FDI flows and their determinants so it is natural to consider the portfolio flows as something that explains FDI flows. But there is also another reason namely, if it comes to a new, emerging

market where there are a lot of new investment possibilities and an undisclosed amount of riskiness and costs to investing in such a market, the more temporary and speculative nature of portfolio flows would drive that kind of investors to enter a market before direct investors would. This is why it would be interesting to see if an increased activity in the portfolio markets in a host country would increase the level of FDI flows to that country because these portfolio investors are herding direct investors.

2.5. *Probability of an FDI relationship*

General use of probabilistic models

Although the use of probabilistic models in the FDI literature is well spread and vast, studies using these models don't often study the role that FDI factors and determinants play on the probability of an FDI relationship between two countries. This could be due to the fact that FDI related studies focus predominantly on the positive FDI flows between countries with little or no consideration of the zero FDI positions between countries. This is partly a theoretical consideration, determinants of FDI flows should be examined on existing flows and not where they do not occur and partly because this type of data (on zero FDI bilateral flows) is usually not supplied by data providers. The OECD dataset does require its members to provide data (whatever the amounts may be) for all of its countries and geographical, regions, territories and various economic and political organisations. Although it's not uniformly and routinely supplied for all time periods by its members, the FDI statistics by the OECD do provide data on when there is zero FDI flows between two countries. While it may not be wise to include this type of data when one looks for determinants of an existing FDI relationship between two countries, it does pose an interesting question when one looks at FDI from a policy or regulatory perspective. It is interesting to examine how much known FDI factors increase the probability that one country will go from a non-existing FDI relationship with another country to a positive FDI flow. This is especially important to be

known for small, remote, developing or emerging markets, capital markets that have been previously constrained in their capital flows for various reasons or economies that simply wish to increase their FDI attractiveness. In this thesis I aim to identify and empirically test a set of variables that increase the familiarity between two countries and consequently contribute to the home country bias phenomenon. Knowing that these factors play a role and determine the corporate decisions regarding FDIs, it should be examined how much changes in some of those factors would increase or decrease the probability of having an FDI relationship with another country. Studies on the determinants of foreign direct investments are naturally complemented by looking at them from the context of policy and non-policy determinants. This has to do with the fact that as mentioned before, FDIs are generally considered to be very beneficial for country growth and advancement (Daude and Fratzscher, 2008) and most countries (especially in the developing world) actively try to attract more of them. However, not all determinants of FDI have the possibility to be affected through a change in policy, hence the need for such a classification of determinants. Guisinger and Li (1992) look into the service industry companies in order to assess the determinants that would attract increased affiliates abroad from these companies. They perform a logistic analysis with a binary dependent variable that is set to express whether or not a service industry MNE has increased its number of foreign affiliates over a given period of time. Their data are compiled using data from the UN transnational companies centre and detail the number of affiliates of 168 MNEs in several target regions such as US, Canada, Japan and Western Europe (developed countries). They find that FDI is increased with the market size and openness while the cultural distance index based on Kogut and Singh (1988) is found to have a negative impact on FDI. Guisinger and Loree (1995) examine the policy and non-policy variables on the location of US direct investment abroad. They find supporting evidence for the significance of some non-policy variables such as political stability, cultural distance, GDP

and infrastructure. While it is debatable what can be considered a policy or non-policy determinant, it is very important to consider the effects of these determinants on the FDI so that the countries can tailor their policies in the right direction in order to attract more FDI flows. The best way to determine the probability of FDI flows between two countries and how different FDI determinants influence that probability is to adopt a non-linear probabilistic model.

Habib and Zurawicki (2002) use a probit analysis when testing the relationship of bilateral FDI inflows and corruption on a large number of countries over a short three-year period using data from the IMF statistics. They apply both an OLS and a probit model to test their hypotheses. They look at the negative impact of the host country's corruption levels on FDI flows even when political stability is also considered as a determinant. They apply a probit analysis to test for the impact on the share of FDI to GDP as the differences in levels of corruption between the investor and host countries have a negative impact on FDI inflows.

The use of probabilistic models isn't limited to FDI or to just finance and economics in general. These types of models are very popular in the medical and biological studies where there is a greater presence of research questions that have qualitative properties. The predictive nature of binary dependent variable models also makes them incredibly useful in government research and analysis in many areas such as urban population patterns, determinants of academic performance or crime studies. In finance for example, binary dependent variable models have a very practical use in predicting country defaults or causes of bankruptcy and there is a large cluster of literature on this. In such a study, Lennox (1999) investigates the determinants of the bankruptcy probability in a large sample of UK listed companies and finds that the most important bankruptcy determinants are profitability, cash flows, leverage and economic cycle. This study also uses both probit and logit models in order to compare the results for the literature on bankruptcy.   In a related area, Kamstra and

Kennedy (2001) use an ordered-logit regression in order to forecast the bond ratings or a change in the ratings for firms by a rating agency. They find that the use of these models yields a highly meaningful and significant analysis at little cost to the firms. In the literature on FDI there is also a cluster of studies using binary dependent variable models however very few, if any use these models to predict whether there will be an FDI relationship between two countries and which factors have a great impact on that. Instead the most frequent focus of probabilistic studies in FDI in on the choice of mode of entry for FDI which is something that these models are ideally suited for.

Probabilistic models and mode of entry of FDI

The role of probabilistic models in the FDI literature is overwhelmingly related to the mode of entry investigation. The mode of entry for a foreign direct investment can be for example as a Greenfield investment (building a new factory abroad for example) or alternatively as a merger and acquisition or a venture capital investment.

Rolfe and Woodward (1993) adopt a probabilistic, binary dependent variable model in order to test for the location determinants of in the context of export oriented manufacturing investments in the Caribbean basin and apply a logistic analysis. Most frequently, the binary response models are used in a specific context with the intention of testing for the impact of a specific factor such as the investment tax incentives (Buettner and Ruf, 2005) for example, or estimation of the probability of entering in a country from a particular region such as the transition countries (Javorcik, 2004) or even for determinants of exit of subsidiaries in Japan (Yamawaki, 2007). Altomonte and Guagliano (2001) use a probit model to determine the investment probability in certain industries for ten Mediterranean countries over an 8 year period. Molteni and Gattai (2005) use a probit analysis to determine the factors that decide the probability if Japanese firms will invest abroad as an FDI or as a joint-venture. In their study

on the entry mode choice, Kogut and Singh (1988) use a binary dependent variable analysis to determine the probability of firms choosing the mode of entry for FDI, (either greenfield, acquisition or as a joint venture) and find that national culture (I use their cultural distance index in this thesis) has a strong impact on the entry mode choice. The mode of entry of FDI (joint venture; trade or contracts) is the subject of a multinomial analysis in Meyer (2001). The determinants of the mode of entry is a very commonly used topic for a binary dependent model analysis (especially with probit). Hebous, Ruf and Weichenrieder (2010) analyse the mode of entry (M&A or Greenfield) probability determinants on German firm-level data and find that when there is less information available due to long distances for example, the firms tend to choose M&A rather than Greenfield investments.

As I briefly discussed previously, the OECD benchmark definition classifies FDI investments in two broad categories as a subsidiary or an associate, but they do not provide the data separately according to that distinction. They do however provide an instruction for its member countries to attempt and provide the classification of the type of the direct investments as M&A's, or Greenfield investments. However these data are currently unavailable and therefore such analysis using this dataset isn't possible.

While the studies using a probabilistic model tend to have a generally narrow geographical focus, there are some that do focus on greater cross country variability. McCalman (2004) uses the probit model on a wide country dataset to investigate the relationship between the FDI and intellectual property rights distribution across the world. The stance of this study is that greater standardisation in these rights across the world would lower the firms' needs for FDI and take them more towards market based solutions such as licence agreements. This study is conducted on a sample of international film distribution by American companies in 40 foreign film markets. This makes the study focus on one industry and from one country and its partner countries. In a similar manner of merging a finance

literature models in the context of FDI, Brandao de Brito and de Mello Sampayo (2005) apply an option-pricing model in order to perform several binary dependent variable models to test for optimal timing and probability for FDI entry. Similarly to what's argued in this thesis, they also argue that the surge in globalization has given a lot of new direct investing opportunities to firms and also it has presented them with a lot of challenges in the investment destination choices. They also use the empirical models and findings from the finance literature and apply it to an FDI setting.

The location choices of FDI in emerging markets are investigated by Paladino (2007) for a sample consisting of Italian banks. Bertrand et al. (2004) use a conditional logit analysis in order to examine the location determinants of some OECD member countries in 1990s FDI outflows in the special case of mergers and acquisitions. Altomonte and Guagliano (2001) is a study with a similar aim to mine, to examine the determinants and implications of FDI investments from European MNEs to two distinct regions: Eastern Europe and South Mediterranean countries by using a probit analysis. Their binary dependent variable takes the value of one if an FDI operation is registered in industry i of country j in year t and zero otherwise. They measure the number of MNE investments from one industry to a particular country from the target areas they've considered using a dataset from UNCTAD. They consider variables for economic size, level of education and institutional familiarity and find that MNEs evaluate the local demand but also consider locations which are in neighboring regions. Most FDI studies using a probabilistic model focus on the entry mode choice or a particular industry or region or the general determinants to investments in a particular location considering only existing (positive) direct investments. I aim to investigate the probability that there will be an FDI flow between two countries on a global, regional and country level in order to confirm the results in a broad way. I am able to do this by using data that also contain country pairs that have reported zero FDI flows.

2.6. Conclusion

The literature review points out to several issues. First, the FDI studies are not frequently associated with the financial literature even though there is a reasonable theoretical basis to assume that the direct investors are plagued by the same issues, such as home bias or herding that have been investigated and found to play an important role for investors in the equity markets.

Second, there are a lot of different FDI studies with a narrow geographical scope and focus that use various determinants across very different regions or countries. A need emerges for uniform analysis which is performed on a geographically segmented data at different levels: global, regional and country so that any differences in the determinants in different areas can be isolated and analysed. The equity markets literature on home bias suggests that it should diminish over time due to the increased capital mobility in the markets and this should be tested in the context of FDI flows.

The FDI flows, to the best of my knowledge, haven't been analysed in the context of the probability of having an FDI flow between two countries. The dataset on FDI by the OECD provides a unique opportunity for this to be investigated. The literature point of that one of the greatest limitations of any study in behavioural finance is the lack of empirical tools to accurately measure and represent the intangible aspects of human behaviour. This is further complicated by frequent data unavailability. Further research is best served by new data resources that directly address some of these specific research areas. The best way to capture what drives investment flows between two geographical locations would be by analysing the flows between two partner entities rather than one-sided investment flows to and from a single location. In the next chapter I discuss the data which are used for the empirical analysis in the thesis.

3. Data

3.1. Introduction

The data for the dependant variables (FDI flows) are obtained from the OECD statistics database that reports on 30 OECD member countries which are listed in figure 1 below, and their possible 337 partner countries, country territories and regions. Thus, the initial data sample for FDI inflows and outflows individually, consisted of 261,175 observations [30 countries x 25 years x 337]. An observation is defined as the value of a bilateral country pair at a given year for one variable. The data were further reduced according to 2 criteria:

1. Country territories, regions or unions weren't considered but rather only sovereign countries. A full list of all possible remaining partner countries that can be found in at least one country pair is in appendix 1.

2. Missing values.

Therefore, the dataset is an unbalanced panel. The data period is from 1981 to 2005.

Table 3.1: List of all OECD members (as of 2008)				
Australia	Finland	Ireland	Netherlands	Spain
Austria	France	Italy	New Zealand	Sweden
Belgium	Germany	Japan	Norway	Switzerland
Canada	Greece	Korea	Poland	Turkey
Czech Republic	Hungary	Luxembourg	Portugal	United Kingdom
Denmark	Iceland	Mexico	Slovak Republic	United States

After the reduction of the data based on the aforementioned conditions, there are 28,879 observations left for FDI inflows and 26,457 for FDI outflows. The provided data on FDI consist of positive, negative FDI flows as well as non - investment relationship (zero FDI flows). I use data on positive FDI flows in chapters 4, 5 and 6 while for the analysis in chapter 7 I add the observations for zero FDI flows. Therefore the data are further reduced to 14,669

observations and 1,867 unique country pairs for FDI outflows and 11,903 observations and 1,789 unique country pairs for FDI inflows when only the positive FDI flows are considered. The dataset becomes 22,989 observations with 2,872 unique bilateral pairs for FDI outflows and 25,390 and 3,066 unique country pairs for FDI inflows when the zero FDI flows data are added for the analysis in chapter 7. The advantages of using panel data compared with cross section or time series data are numerous (Kennedy, 2003, p.302): it deals with heterogeneity in the micro units, it reduces the omitted variable bias, alleviates multicollinearity problems because it's more informative, it allows for analysis of issues that cannot be done solely across section or time and finally it allows a dynamic analysis of the data that a single cross section or time series doesn't. Data on all of the variables come from four different sources (full list of variables and data sources can be found in table 3.11, at the end of this chapter). Data on FDI flows are taken from the OECD, data on GDP, GDP per capita and exports and imports are from the World Bank, data on distances come from the French Centre for International Economic Studies (CEPII), and the data on the legal system origins of the countries come from professor Rafael La Porta's datasets (1998;2008), the cultural distance index is taken from Geert Hofstede's website and studies (1980; 1983; 2001) and Kogut and Singh (1988) while some of the variables I constructed myself.

I consider FDI outflows and inflows among all available country pairs. The FDI inflows are flows to the FDI receiving country (OECD member) from a partner country (that can be anywhere in the world). The FDI outflows are flows from the FDI sending country (OECD member) to a partner country (any world country). Data on FDI flows are in constant millions of US dollars. The descriptive statistics for the data in the different empirical analyses can be found in tables 3.2 through to 3.7; the correlation tables for the data can be found in tables 3.8 to 3.10. In the following section I define and briefly discuss all of the variables used in the thesis. First I define the dependent variables and discuss their descriptive statistics for both

inflows and outflows followed by all of the independent variables for both inflows and outflows. This is followed by a brief analysis of the correlation matrix.

3.2.   Variable definitions

The following section will give a brief description of the definition of the variables used in this thesis. It starts with the dependent variables, FDI inflows and outflows followed by the description of all of the independent variables.

3.2.1. Dependent variables

This section describes the various forms of the dependent variables as they appear in the empirical analysis in chapters 4 through 7. They may take the form of FDI outflows or inflows; FDI over GDP and a binary dependent variable form. The basic, underlying form of the dependent variable is FDI flows. The foreign direct investment flows represent the inflows or outflows of direct investment *to* and *from* an OECD member country and its FDI partner country. The FDI flows data are on an annual basis and in $US million or in a binary variable form. The following sub-sections present the different forms that the dependent variables can take throughout the empirical chapters first for FDI outflows then inflows.

A) FDI outflows

Foreign direct investment outflows are the investment flows *from* country i (sending country) to country j (receiving country) at time t (year), in the case of this thesis the FDI flows from the OECD member countries towards their partner countries anywhere in the world. This levels form of *FDI outflows* is used as the dependent variable in chapters 4 and 5. In chapter 6, in addition to the level form of FDI outflows I use the following form: *FDI outflows divided by the GDP of the sending country*. In chapter 7 the dependent variable is

transformed from FDI outflows to a *binary variable form*. In that case, the dependent variable takes the value of one if there are positive FDI outflows between country i and j at time t and zero if there is a zero-FDI relationship in the country pair.

B) FDI inflows

Foreign direct investment inflows represent flows *to* country i (receiving country) from country j (sending country) at time t. They are the inflows to the OECD member countries from their FDI partner countries anywhere in the world. The *FDI inflows* appear as a dependent variable in this level form in chapters 4 and 5. FDI inflows aren't used in the empirical analysis in chapter 6. In chapter 7 same as for the FDI outflows, the dependent variable is transformed into a *binary dependent variable* that takes the value of one if there is a positive FDI inflow in the country pair and zero if there is a zero-FDI relationship.

3.2.2. Independent variables

The dataset includes thirteen independent variables taken into consideration when building the econometric models in the empirical chapters 4-7. The independent variables are presented and organised in five groups: institutional, cultural and geographical proximity variable groups, macroeconomic variables and other variables.

A) Institutional Proximity Variable Group

This group includes five variables: same economic or political organisation, same origin of the legal system, shared history, common official or minority language and a cultural distance index. The variables in this group are all dummy variables except for the cultural distance which is an index value.

Membership in the same economic or political organisation

This variable takes the value of one if both countries in the bilateral country pair are members of the same international *economic or political organisation*. I constructed this variable by considering countries' membership to four economic or political unions: Organisation for Economic Cooperation and Development (OECD), the European Union (EU), the Commonwealth of Nations and the North American Free Trade Association (NAFTA). The data on this are taken from the corresponding organisations' websites. The Association of Southeast Asian Nations (ASEAN) cannot be added to this variable because none of its members are an OECD member country which would mean that the variable would never take a value of one for sharing membership to ASEAN.

Same origin of the country's legal system

The *shared legal origin* variable [LEGORSAME] takes the value of one if the FDI sending and receiving country's legal system origin is the same and zero otherwise. These data divides the legal systems in the world into 5 categories: British, French, German, Socialistic and Scandinavian. Data on countries' origin of the legal system are taken from La Porta et al (1998; 2008) and professor Rafael La Porta's datasets and can be found on his website. This division of the legal systems is a good approximation for institutional similarity between countries. These legal system aspects are incorporated into specific legal rules as well as the organisations, human capital and beliefs of its participants (La Porta et al., 2008).

B)   Cultural Proximity Variable Group

Shared History

I compiled the *shared history* variable from five other variables taken from the CEPII's dataset. The dummies from which this dummy is made up of are: if the countries

have had a common colonizer after 1945, have ever had a colonial link, have had a colonial relationship after 1945, are currently in a colonial relationship or were or are presently the same country. The shared history part of the variable, as explained in CEPII's dataset notes, complements the common colonizer information setting to one if the countries were the same state or the same administrative entity for a long period (25-50 years in the twentieth century, 75 years in the ninetieth and 100 years before). This definition covers countries that have belonged to the same empire (Austro-Hungarian, Persian, Turkish), countries that have been divided (Czechoslovakia, Yugoslavia) and countries that have belonged to the same administrative colonial area. For instance, Spanish colonies are distinguished following their administrative divisions in the colonial period (viceroyalties). According to this definition, Argentina, Bolivia, Paraguay and Uruguay were thus a single country. Similarly, the Philippines were subordinated to the New Spain viceroyalty and thus the 'same country' equals to one with Mexico. Sources for this variable came from (http://www.worldstatesmen.org/). This newly constructed shared history dummy takes the value of one if the two countries in the bilateral pair had any of the aforementioned relationships and zero otherwise.

Common Official or Minority Language

I made the common language [LANGCOM] variable out of two other variables: a common official language and a common language of a minority group between the two countries in the bilateral pair. For the purpose of this variable a significant minority group is considered if there's a minority population of at least 9% (this level is set by the data provider, CEPII) that speaks the same language of another country. This variable takes the value of one if the two countries share a common official or a minority language and zero otherwise.

Cultural Distance Index

The *cultural distance index* is calculated following Kogut and Singh (1988) and is based on the four cultural dimensions developed by Hofstede (1980; 1983). The data on these dimensions are taken from Hofstede's website (www.geert-hofstede.com). The four dimensions are:

i) *Power distance index*: the extent to which the less powerful members of organisations and institutions accept and expect that power is distributed equally;

ii) *Individualism:* the degree to which individuals are integrated into groups;

iii) *Masculinity*: the distribution of roles between genders;

iv) *Uncertainty avoidance index:* society's tolerance for uncertainty and ambiguity.

These are sociological circumstances in which individuals live and work in different societies. The idea behind Kogut and Singh's index is to measure the difference in these cultural dimensions between the two countries involved in an FDI relationship. The index is calculated using the following formula:

$$CD_{i,j} = \frac{\sum_{d=1}^{4} \frac{(I_{d,i} - I_{d,j})^2}{V_d}}{4} \qquad (3.1)$$

Where the $I_{d,i}$ and $I_{d,j}$ is the individual cultural dimension (d) for country i and j respectively and V_d is the variance of each of the cultural dimensions.

C) Physical Proximity Variable Group

The physical proximity variables group includes three variables: physical distance between the country pairs and two variables if the countries in the bilateral country pair are on the same continent or if they share a border. Data on these variables are taken from CEPII.

Physical distance

The data on geographical distances [DIST] are measured following Head and Meyer (2002) and the formula for the distances is not a simple air distance between two cities but it is calculated using the countries' area and the capitals' longitude and latitude:

i, $d_{ii} = 0.67 * \sqrt{(area/\pi)}$

This variable is measured in kilometres and represents the physical distance between the two countries in the country pair.

Location on the Same Continent

This variable [SAMECONT] takes the value of one if the two countries in the bilateral country pair are on the same continent and zero otherwise. I constructed this variable using continent country location data taken from the CEPII.

Shared Border

The shared border variable [BORDER] takes the value of one if the country pair shares a border and zero otherwise. It is taken from the CEPII dataset.

D) Macroeconomic Variable Group

Data on the macroeconomic variables are from the World Bank database. They're in millions of $US. I use five macroeconomic variables including: Gross Domestic Product [GDP] for both the sending and receiving countries, Exports plus Imports as a percentage of GDP [EXIM/GDP] for both the sending and receiving countries and Portfolio Equity Investments in the FDI receiving country [PEIrec] in chapter 6 only.

Gross domestic product [GDP]

This variable [GDP_rec] [GDP_send] represents the gross domestic product of a country at time t. It is measured in constant prices (base year, 2000) for each country so that the effects of inflation on the reported levels of GDP can be offset, both for the FDI receiving and the sending country. It is in $US millions.

Country openness to trade

The country openness [EXIM/GDP_rec] [EXIM/GDP_send] is a measurement of the country's openness to trade flows. It is calculated by adding the exports and imports of a country and dividing it by its GDP. The original data on exports and imports are measured in constant prices (base year, 2000) both for the FDI inflows receiving and the sending country and in $US million and the same is the case for the GDP. I calculated this variable from data on the percentage of exports and imports in GDP as obtained from the World Bank's world development indicators.

Portfolio Equity Flows for the FDI outflows receiving country

*Portfolio equity flows [*PEI*rec]* data are taken from the World Bank database and are net and include non-debt-creating portfolio equity flows (the sum of country funds, depository receipts, and direct purchases of shares by foreign investors).

E) Other Variables

Bilateral trust

The index measures *bilateral trust* between citizens of two countries in a sample of 15 European countries (Austria, Belgium, the UK, Denmark, the Netherlands, Finland, France,

Germany, Greece, Ireland, Italy, Norway, Portugal, Spain and Sweden). It's obtained from Guiso et al. (2009). The trustworthiness is rated on a scale from 1-4 (1 being not at all and 4 being a lot of trust).

International telephone calls per capita

The international telephone calls measures the international minutes of telephone conversations that occurred in the FDI receiving country. They are measured in minutes and divided by the country's population (per capita).

Financial Times Circulation per capita

I've obtained all available data from the *Financial Times newspaper* on their newspaper circulation. They are used as per capita for the FDI outflows receiving country. Data are obtained directly from the Financial Times company.

Bilateral tax treaty for double taxation avoidance

This is a dummy variable that takes the value of one if the two countries in the bilateral country pair have a signed *bilateral treaty for double taxation avoidance*, zero otherwise. I constructed this variable from ob available in the United Nations Conference on Trade and Development's (UNCTAD) country profile database (available on UNCTAD's website: www.unctad.org).

Country governance

I include six country governance indicators in order to capture some country specific factors that have to do with doing business in one country and the costliness that might entail.

They are obtained from the World Bank as explained in Kaufman et al., (2009). The six aggregate indicators are as follows:

i) *Voice and Accountability* captures perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media.

ii) *Political Stability and Absence of Violence* captures perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism.

iii) *Government Effectiveness* captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.

iv) *Regulatory Quality* captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.

v) *Rule of Law* captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.

vi) *Control of Corruption* captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.

3.3. Descriptive statistics

The descriptive statistics for the variables used in the analysis can be found in the tables 3.2 through to 3.7. The descriptive statistics tables show the basic descriptive properties

Table 3.2. OECD member countries - continent statistics

Continent	Number of countries	Percentage (of No. count.)	No. FDI outflows obs.
Europe	23	76%	11,876
Americas	3	10%	973
Asia	2	6.67%	1,407
Pacific (Australia, Oceania)	2	6.67%	413
Total	**30**	**100%**	**14,669**

Table 3.3. Partner countries - continent statistics

Continent	No. of cross sections	No. FDI outflows obs.	Percentage (of obs.)
Europe	767	6,908	47.1 %
Americas	503	3,819	26 %
Asia – Pacific	335	2,644	18.16 %
Africa	262	1,298	8.85 %
Total	**1,867**	**14,669**	**100%**

Table 3.4a. Descriptive statistics for FDI outflows panel data (used in chapters 4 and 5)

The table reports the main descriptive statistics of the variables used in the FDI outflows analysis. These variables are in their original units

	FDI Outflows (mil$)	GDP of FDI Receiving country(mil$)	GDP of FDI Sending country(mil$)	Trade Openness of the FDI Rec. country	Trade Openness of the FDI Send. Country	Physical Distance (km)	Location on Same continent	Shared Border	Econ. or Political Organisation	Legal Syst. Origin	Shared History	Common Language	Cultural Distance Index
Mean	593	606,157	1,329,119	0.74	0.66	5,467	0.45	0.07	0.50	0.26	0.14	0.09	2.06
Median	34	134808	505,144	0.62	0.56	4,691	0	0	0	0	0	0	1.88
Maximum	172,210	10,995,800	10,995,800	3.67	2.97	19,447	1	1	1	1	1	1	10.69
Minimum	0.001	132	6,500	0.10	0.16	59	0	0	0	0	0	0	0.00
St. Dev.	3,078	1,507,324	2,044,870	0.48	0.42	4,536	0.50	0.25	0.50	0.44	0.35	0.28	1.46
Observations	14,670	14,669	14,670	13,878	14,670	14,670	14,670	14,670	14,670	14,670	14,670	14,670	11,627

Table 3.4b. Descriptive statistics for additional variables for FDI outflows panel data (used in chapter 4)

The table reports the main descriptive statistics of the additional variables used in the FDI outflows analysis. These variables in their original units.

	Bilateral Trust	International Phone Minutes for rec. Country per capita	FT circulation per capita for rec. country	Bilateral treaties	Voice and Accountability	Political Stability	Government Effectiveness	Regulatory Quality	Rule of Law	Control of Corruption
Mean	2.82	65.26	0.0004	0.76	0.50	0.29	0.70	0.62	0.56	0.60
Median	2.74	25.94	0.0001	1	0.75	0.44	0.69	0.73	0.65	0.45
Maximum	3.65	867.28	0.0037	1	1.83	1.68	2.64	3.41	2.12	2.53
Minimum	2.18	0.07	0.0000	0	-1.86	-2.46	-2.51	-2.67	-2.07	-1.74
St. Dev.	0.32	102.32	0.0007	0.43	0.92	0.89	1.02	0.88	0.99	1.09
Observations	2,773	11,632	3,425	13,968	6,290	6,288	6,288	6,289	6,285	6,274

Table 3.5a. Descriptive statistics for FDI inflows panel data (used in chapters 4 and 5)

The table reports the main descriptive statistics of the variables used in the FDI outflows analysis. These variables are in their original units

	FDI Inflows (mil$)	GDP of FDI Receiving country(mil$)	GDP of FDI Sending country(mil$)	Trade Openness of the FDI Rec. country	Trade Openness of the FDI Send. Country	Physical Distance (km)	Location on Same continent	Shared Border	Econ. or Political Organisation	Legal Syst. Origin	Shared History	Common Language	Cultural Distance Index
Mean	590	1,053,480	798,958	0.71	0.76	5,361	0.48	0.07	0.60	0.30	0.09	0.16	7.77
Median	19	407,951	187,692	0.57	0.66	3,595	0.00	0.00	1.00	0.00	0.00	0.00	6.70
Maximum	108,566	10,995,800	10,995,800	2.97	3.67	19,630	1.00	1.00	1.00	1.00	1.00	1.00	42.76
Minimum	0.001	6,500	52	0.16	0.10	60	0.00	0.00	0.00	0.00	0.00	0.00	0.07
St. Dev.	3,029	1,819,463	1,727,969	0.49	0.50	4,653	0.50	0.26	0.49	0.46	0.28	0.37	5.91
Observations	**11,903**	**11,903**	**11,903**	**11,837**	**11,325**	**11,903**	**11,903**	**11,903**	**11,903**	**11,903**	**11,903**	**11,903**	**10,057**

Table 3.5b. Descriptive statistics for additional variables for FDI inflows panel data (used in chapter 4)

The table reports the main descriptive statistics of the additional variables used in the FDI outflows analysis. These variables in their original units.

	Bilateral Trust	International Phone Minutes for rec. Country per capita	FT circulation per capita for rec. country	Bilateral treaties	Voice and Accountability	Political Stability	Government Effectiveness	Regulatory Quality	Rule of Law	Control of Corruption
Mean	2.82	70.18	0.0006	0.84	1.16	0.82	1.41	1.21	1.22	1.27
Median	2.78	53.26	0.0003	1.00	1.29	0.89	1.61	1.18	1.39	1.42
Maximum	3.65	397.01	0.0037	1.00	1.83	1.68	2.64	2.01	2.12	2.53
Minimum	2.18	3.95	0.0000	0.00	-0.68	-1.49	-0.17	0.04	-0.51	-0.51
St. Dev.	0.32	58.90	0.0009	0.36	0.45	0.56	0.66	0.49	0.67	0.82
Observations	**2,635**	**9,230**	**3,390**	**6,895**	**5,376**	**5,376**	**5,376**	**5,376**	**5,376**	**5,376**

Table 3.6a. Descriptive statistics for FDI outflows panel data used in chapter 6
The table reports the main descriptive statistics of the variables used in the FDI outflows analysis. These variables are in their original units.

	FDI Outflows (mil$)	GDP of FDI Receiving country(mil$)	GDP of FDI Sending country(mil$)	Trade Openness of the FDI Rec. country	Trade Openness of the FDI Send. Country	Physical Distance (km)	Location on Same continent	Shared Border	Econ. or Political Organisation	Legal Syst. Origin	Shared History	Common Language	Cultural Distance Index
Mean	593	606,157	1,329,119	0.74	0.66	5,467	0.45	0.07	0.50	0.26	0.14	0.09	2.06
Median	34	134808	505,144	0.62	0.56	4,691	0	0	0	0	0	0	1.88
Maximum	172,210	10,995,800	10,995,800	3.67	2.97	19,447	1	1	1	1	1	1	10.69
Minimum	0.001	132	6,500	0.10	0.16	59	0	0	0	0	0	0	0.00
St. Dev.	3,078	1,507,324	2,044,870	0.48	0.42	4,536	0.50	0.25	0.50	0.44	0.35	0.28	1.46
Observations	14,670	14,669	14,670	13,878	14,670	14,670	14,670	14,670	14,670	14,670	14,670	14,670	11,627

Table 3.6b. Descriptive statistics for other variables used in chapter 6
The table reports the main descriptive statistics of the variables used in the FDI outflows analysis in chapter 6. These variables are in their original units.

	PEI in the receiving country (mil$)	FDIoutfl. i,j,t / GDPi – FDIoutfl.usa,j,t / GDPusa (mil$)	FDIoutfl. i,j,t / GDPi – FDIoutfl.uk,j,t / GDPuk (mil$)	FDIoutfl. i,j,t / GDPi – FDIoutfl.jpn,j,t / GDPjpn (mil$)	Total European FDI outflows to country j at time t (- i)
Mean	5,730	0.0000060	0.000005	0.0000072	7,668
Median	102	0.0000022	0.000002	0.0000033	2,008
Maximum	275,575	0.0003090	0.000310	0.0000850	198,466
Minimum	-43,550	- 0.0003070	- 0.000333	- 0.0000196	0
St. Dev.	20,541	0.0000237	0.000026	0.0000136	17,682
Observations	14,670	8,197	10,905	757	5,803

Table 3.7a. Descriptive statistics for FDI outflows panel data used in Chapter 7

The table reports the main descriptive statistics of the variables used in the FDI outflows probit analysis. The variables are in their original units.

	Binary dependent (FDI relationsh.)	GDP of FDI Receiving country(mil$)	GDP of FDI Sending country(mil$)	Trade Openness of the FDI Rec. country	Trade Openness of the FDI Send. Country	Physical Distance (km)	Location on Same continent	Shared Border	Econ. or Political Organisation	Legal Syst. Origin	Shared History	Common Language	Cultural Distance Index
Mean	0.47	415,987	1,070,412	0.76	0.69	6,171	0.34	0.05	0.36	0.24	0.07	0.11	8.52
Median	0	66,974	392,790	0.65	0.56	5,716	0.00	0.00	0.00	0.00	0.00	0.00	7.68
Maximum	1	10,995,800	10,995,800	3.67	3.07	19,630	1.00	1.00	1.00	1.00	1.00	1.00	42.76
Minimum	0	28	6,500	0.10	0.15	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00
St. Dev.	0.50	1,249,750	1,744,955	0.47	0.45	4,625	0.48	0.21	0.48	0.42	0.26	0.32	6.17
Observ.	22,983	22,983	22,989	20,460	22,977	22,989	22,989	22,989	22,989	22,989	22,989	22,989	14,525

Table 3.7b. Descriptive statistics for FDI inflows panel data used in Chapter 7

The table reports the main descriptive statistics of the variables used in the FDI inflows probit analysis. The variables are in their original units.

	Binary dependent (FDI relationsh.)	GDP of FDI Receiving country(mil$)	GDP of FDI Sending country(mil$)	Trade Openness of the FDI Rec. country	Trade Openness of the FDI Send. Country	Physical Distance (km)	Location on Same continent	Shared Border	Econ. or Political Organisation	Legal Syst. Origin	Shared History	Common Language	Cultural Distance Index
Mean	0.64	871,527	403,831	0.70	0.79	6,706	0.32	0.04	0.33	0.25	0.06	0.13	8.30
Median	0	407,951	47,097	0.58	0.69	6,510	0.00	0.00	0.00	0.00	0.00	0.00	7.31
Maximum	1	10,995,800	10,995,800	2.97	3.67	19,630	1.00	1.00	1.00	1.00	1.00	1.00	42.76
Minimum	0	5,362	26	0.16	0.10	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00
St. Dev.	0.49	1,407,620	1,246,346	0.42	0.46	4,720	0.47	0.20	0.47	0.43	0.24	0.34	6.28
Observ.	25,390	25,390	25,375	25,274	22,085	25,390	25,390	25,390	25,390	25,390	25,390	25,390	14,636

of the variables in their original values. Therefore, the data are presented in the original units and they show: the mean, minimum, maximum, standard deviation, sum and number of observations.

3.3.1. Dependent Variables

A) FDI outflows

The FDI outflows panel dataset contains a total of 14,670 FDI outflows observations. It contains a total of 1,867 different country pairs. The total monetary value of the FDI outflows in the sample is 7,905,061 million of $US across the 25 years in the sample period with an average outflow investment in the sample of $US 298 million per annum and per country pair. The minimum FDI outflows is $US 0.001 million and a maximum outflow investment of $US 172,210 million per year and per country pair [inflows from Germany in the UK in 2000]. The fact that the FDI outflows have a higher average and volume than the FDI inflows is understandable as the OECD member countries (from which the FDI outflows originate) include the majority of the richest countries in the world.

FDI outflows – binary dependent variable

This variable has been constructed in order to be used in the probit econometric estimation of chapter 7. The descriptive statistics can be found in table 3.7a. This binary dependent variable takes the value of one if there is a positive FDI relationship (FDI outflow) between the two countries in the bilateral country pair. This variable has 22,989 observations and 2,872 unique country pairs. Since it can only take the values of 0 and 1 these are its maximum and minimum. The average is 0.47 which means that 47% of the observations have an FDI relationship in the FDI outflows.

B) FDI inflows

The FDI inflows panel dataset contains a total of 11,903 observations. It contains a total of 1,789 unique bilateral country pairs. The total monetary value of the FDI inflows in the sample is $US 6,367,971 million of across the 25 years in the sample period with an average inflow in this sample is $US 590 million per annum, per country pair. The minimum FDI inflows is $0.001 million and a maximum inflow investment of $US 108,566 million per year and per country pair [Inflow from USA to the UK in 1999].

FDI inflows – binary dependent variable

This variable is constructed to be used in the probit econometric estimation of chapter 7. The descriptive statistics can be found in table 3.7b. There are two binary dependent variables in this case as well, both of which can have the value of either 0 or 1. The first binary dependent variable takes the value of one if there is a positive FDI relationship (FDI inflow) between the two countries in the bilateral country pair. This variable has 25,390 observations and 3,066 unique country pairs. Since it can only take the values of 0 and 1 these are its maximum and minimum. The average is 0.64; 64% of the observations have an FDI relationship in the FDI inflows data.

3.3.2. Independent Variables

In this section I discuss the basic descriptive statistics of all of the independent variables that are used in the empirical analyses in chapters 4 through 7. The descriptive statistics can be found in tables 3.2 to 3.7.

Membership in the same economic or political organisation dummy

In the data sample, 50% of the countries in the country pairs share membership to an economic or a political organisation for FDI outflows and 60% in the inflows. This variable is a dummy and can only take the values of zero and one. It matches the dependent variable in the number of observations and has 14,670 and 11,903 for outflows and inflows respectively.

Same origin of the country's legal system

In this case, 26% and 30% of the bilateral country pairs in the FDI outflows and inflows respectively have the same origin of their legal systems. It only takes the values of zero and one. It has 14,670 and 11,903 observations for outflows and inflows respectively.

Shared History

For this variable, 14% of the bilateral country pairs in the FDI outflows share a common history as defined in the previous section while the mean is 9% in the FDI inflows sample. The minimum and maximum values are 0 and 1 and there are 14,670 and 11,903 observations for outflows and inflows respectively.

Common Official or Minority Language Dummy

The dummy has the value of one the bilateral country pair countries have either a common official language or a common language that a minority speaks and zero otherwise. In this sample, 9% of bilateral country pairs that have a language in common in the FDI outflows while this number is 16% for the inflows. The values for this dummy variable as well are either one or zero and the number of observations is 14,670 and 11,903 for outflows and inflows respectively.

Cultural Distance Index

The data on this index are time-invariant and reduce the sample to 11,304 and 10,057 observations for outflows and inflows respectively. The individual cultural dimensions may range from 0-100. In this sample the mean cultural distance index is 2.06 for the FDI outflows and 7.77 for the FDI inflows. In the outflows, the minimum is 1.88 while the maximum is 10.69 which points to the fact that most of the country pairs in the sample are culturally closer. In the FDI inflows, the minimum is 6.70 and maximum 42.76 which indicates a greater cultural distance in the inflows country pairs.

Physical distance

The average distance between the country pairs in the sample is 6,610 km. The smallest distance is around 60km [distance between Austria and the Slovak Republic] and the furthest away country pairs are around 20,000 km. As an illustration, the distance between Australia and Malaysia is around 6,600 km (the mean) and New Zealand and France are approximately 20,000 km apart (the maximum in the sample).

Same Continent Dummy

In the dataset, 45% and 48% of the bilateral country pairs are on the same continent for FDI outflows and inflows respectively. The min-max values are zero and one as in all dummy variables and the number of observations are 14,670 and 11,903 for outflows and inflows respectively.

Shared Border Dummy

In the dataset, 7% of the bilateral country pairs share a border for both FDI outflows and inflows. The min-max values are zero and one as in all dummy variables and the number of observations are 14,670 and 11,903 for outflows and inflows respectively.

Gross domestic product [GDP]

In the *FDI outflows* sample, the mean GDP value for the receiving country is $US 606,157 million. The highest GDP value per year and country is $US 10,995,800 million (10.1 trillion) (USA, 2005) while the smallest GDP per year and country in the dataset is $US 132 million (Kiribati, 1987). The mean GDP value for the sending country (an OECD member country) is $US 1,329,119 million per year (roughly 1 trillion). The highest GDP value per year and country is $US 10,995,800 million (10.1 trillion) (USA, 2005) and the smallest GDP per year in the data is $US 6,500 million and it's in Iceland in 1992.

In the case of *FDI inflows*, the mean GDP value for the receiving country (an OECD member country) is $US 903,820 million per year and per country pair. The highest GDP value per year and per country is $US 10,995,800 million (10 trillion) (USA, 2005) and the smallest GDP per year in the sample is $US 6,500 million and it's in Iceland in 1992. The mean GDP value for the sending country is $US 418,852 million (4.1 trillion). The highest GDP value per year and per country is $US 10,995,800 million (10.1 trillion) per year (USA, 2005) and the smallest GDP per year and per country in the sample is $US 52 million per year.

Country openness to trade

The country openness to trade is a ratio between the sum of exports and imports and the GDP of a country. In the case of *FDI outflows*, the mean of this variable for the receiving country is 74%. The highest participation of exports plus imports over GDP per year and country is 367% (Bulgaria in 1989) and the minimum is 10% (Argentina in 1984). The mean of this variable for the sending country is 66%. The highest participation of exports plus imports over GDP per year and country is 297% (Luxembourg in 2005) and the minimum is 16% (Japan in 1993).

In the case of *FDI inflows*, the mean of this variable for the FDI receiving country is 71%. The highest participation of exports plus imports over GDP per year and country is 297%

(Luxembourg in 2005) and the minimum is 16% (Japan in 1993). The mean of this variable for the FDI receiving country is 76%. The highest participation of exports plus imports over GDP per year and country is 367% (Hong Kong in 2005) and the minimum is 10% (Argentina in 1984).

Portfolio Equity Flows for the FDI outflows receiving country

The data are in current U.S. dollars. For the purpose of the empirical analysis in chapter 6, where this variable is used, I transformed this series into constant 2000 U.S dollars in order to make this variable comparable to the others used in the regressions. This variable is only used with FDI outflows. The mean portfolio equity flows per country and year is US$ 5,730 million.

Bilateral trust

This variable reduces the sample to just 2,773 and 2,635 observations for FDI outflows and inflows respectively. The data are a set of surveys conducted by Eurobarometer and sponsored by the European Commission (Guiso et al, 2009). They were conducted on a representative sample of the total population over the age of sixteen and on about 1,000 individuals per country. The survey question asked them to rate how much they trust people from their own country and from other countries. They rate the trustworthiness on a scale from 1-4 (1 being not at all and 4 being a lot of trust) and the index is an average of all answers. Because all countries are European this also makes the same continent and economic organisation dummies have the value 1 for each observation and therefore unusable in this regression. Due to the limited number and range of countries that are covered with this index, this variable clashes with the some of the other variables like shared economic or political

organisation and same continent when it may cause all of the country pairs to have those variables with the value of one.

International telephone calls per capita

The data on international telephone calls are obtained from the International Telecommunications Union (www.itu.int). Data are from 1995-2005 and they have 11,632 and 9,230 observations for outflows and inflows respectively. The average international telephone call minutes are 65.26 minutes per country and year.

Financial Times Circulation per capita

I obtained this data from the Financial Times company and they are on their 6 month world circulation available for the following years only: 2004, 2002, 2001, 1999 and 1998. The number of observations is only 3,425 and 3,390 for outflows and inflows respectively.

Bilateral tax treaty for double taxation avoidance

Data were unavailable for Korea, Mexico and Turkey and therefore when this variable is used, these three countries are not included in the panel. The data are available for all the years of the sample and the number of observations is 6,895 and 13,968 for FDI inflows and outflows respectively.

Country governance

For corporate governance I include six variables from the World Governance Indicators (WGI can be found on www.govindicators.org) available for all countries between the 1996-2008 period. Their data are compiled from a number of 441 variables, 35 different sources and 33 organisations that inform on aspects of governance. Then the authors assign each of the following six aggregate indicators with that information and use an unobserved

components model to construct them. These indices range from a minimum of -2.67 to a maximum of +3.41. They're also highly correlated amongst themselves and I cannot therefore use them together in the same regression but rather adding them one by one in order to see their effect. The data are available for the following years only: 1996, 1998, 2000 and 2002-2005. The number of observations for each of the six indicators ranges from 5,300 and 6,300 observations for FDI inflows and outflows.

3.3.3. Other data particularities

There are several countries in the dataset that are missing a whole dummy variable which therefore cannot be used in some of the individual country estimations. The shared border dummy variable doesn't take the value of one in the cases of island countries. There are five island countries among the OECD member countries: Australia, Iceland, Japan, New Zealand and Korea [the data are on South Korea, which only borders North Korea (for which there aren't any data) and it is effectively an island country in this sample]. For these countries the shared border dummy variable never takes the value of one and cannot be used in the estimation for these countries. The common language dummy in the sample also never has a value of one for these countries: Czech Republic, Denmark, Greece, Iceland, Japan, Norway and Poland. In the case of the same history dummy variable, it doesn't have a value of one for: Switzerland, Norway and Italy with an addition of Belgium in the outflows dataset.

Table 3.8a. Correlations table for FDI outflows panel data used in chapters 4 and 5

The table reports the correlation coefficients of the variables used in the FDI Outflows regression analysis.

	L FDI Outflows	L GDP of FDI Receiving country	L GDP of FDI Sending country	Trade Openness of the FDI Rec. country	Trade Openness of the FDI Send. country	L Distance	Location on Same continent	Shared Border	Econ. or Political Organisation	Legal Syst. Origin	Shared History	Common Language	Cultural Distance Index
L FDI Outflows	1.00												
L GDP of FDI Receiving country	0.41	1.00											
L GDP of FDI Sending country	0.37	-0.12	1.00										
Trade Openness of the FDI Rec. country	-0.02	-0.39	-0.04	1.00									
Trade Openness of the FDI Send. country	-0.15	-0.07	-0.62	0.12	1.00								
L Distance	-0.15	0.01	0.23	-0.18	-0.17	1.00							
Location on Same continent	0.11	0.02	-0.21	0.16	0.08	-0.81	1.00						
Shared Border	0.19	0.09	-0.04	0.04	0.02	-0.47	0.29	1.00					
Econ. or Political Organisation	0.31	0.48	-0.10	-0.08	-0.02	-0.30	0.35	0.17	1.00				
Legal Syst. Origin	0.07	-0.07	-0.03	-0.03	0.04	-0.04	-0.04	0.19	0.01	1.00			
Shared History	0.17	-0.04	0.12	-0.01	-0.06	0.05	-0.09	0.20	-0.01	0.36	1.00		
Common Language	0.10	-0.10	0.05	0.00	-0.07	-0.02	-0.11	0.14	-0.02	0.33	0.46	1.00	
Cultural Distance Index	-0.18	-0.10	-0.03	0.10	0.03	0.13	-0.07	-0.21	-0.21	-0.30	-0.20	-0.13	1.00

Table 3.8b. Correlations table for FDI inflows panel data used in chapters 4 and 5

The table reports the correlation coefficients of the variables used in the FDI Inflows regression analysis.

	L FDI inflows	L GDP of FDI Receiving country	L GDP of FDI Sending country	Trade Openness of the FDI Rec. country	Trade Openness of the FDI Send. country	L Distance	Location on Same continent	Shared Border	Econ. or Political Organisation	Legal Syst. Origin	Shared History	Common Language	Cultural Distance Index
L FDI inflows	1.00												
L GDP of FDI Receiving country	0.23	1.00											
L GDP of FDI Sending country	0.53	-0.05	1.00										
Trade Openness of the FDI Rec. country	-0.15	-0.64	-0.15	1.00									
Trade Openness of the FDI Send. country	-0.02	0.02	-0.42	0.08	1.00								
L Distance	-0.25	0.17	0.02	-0.13	-0.13	1.00							
Location on Same continent	0.17	-0.17	-0.02	0.04	0.10	-0.82	1.00						
Shared Border	0.20	-0.02	0.06	0.00	-0.01	-0.42	0.27	1.00					
Econ. or Political Organisation	0.49	-0.05	0.48	-0.07	-0.11	-0.33	0.36	0.15	1.00				
Legal Syst. Origin	0.00	0.00	-0.13	0.01	-0.02	-0.03	-0.03	0.18	-0.10	1.00			
Shared History	0.08	0.07	-0.08	-0.06	-0.04	-0.02	-0.12	0.15	-0.06	0.32	1.00		
Common Language	0.08	0.11	-0.10	-0.05	-0.02	0.09	-0.11	0.19	-0.12	0.37	0.45	1.00	
Cultural Distance Index	-0.12	-0.08	-0.03	0.05	0.10	0.10	-0.07	-0.18	-0.07	-0.32	-0.13	-0.20	1.00

Table 3.8c. Correlations table for FDI outflows panel data used in chapters 4 and 5 (continues from table 3.9a)
The table reports the correlation coefficients with the robustness variables used in the FDI Outflows regression analysis.

	Bilateral trust	International Phone Calls/cap	FT circulation per capita	Bilateral tax treaties	Voice and Accountability	Political Stability	Government Effectives	Regulatory Quality	Rule of Law	Control of Corrupt
L FDI Outflows	0.09	0.15	0.22	0.34	0.27	0.21	0.33	0.31	0.31	0.30
L GDP of FDI Receiving country	-0.16	0.14	0.14	0.39	0.35	0.22	0.50	0.42	0.45	0.43
L GDP of FDI Sending country	-0.32	-0.07	-0.06	0.07	-0.11	-0.10	-0.10	-0.10	-0.09	-0.09
Trade Openness of the FDI Rec. country	0.21	0.50	0.33	-0.13	0.08	0.28	0.16	0.24	0.15	0.13
Trade Openness of the FDI Send. country	0.21	0.06	0.00	-0.10	-0.03	-0.02	-0.05	-0.04	-0.05	-0.04
L Distance	-0.31	-0.08	-0.27	-0.17	-0.28	-0.27	-0.24	-0.24	-0.24	-0.22
Location on Same continent	NA	0.08	0.26	0.19	0.43	0.39	0.33	0.36	0.33	0.31
Shared Border	0.07	0.06	0.05	0.07	0.15	0.13	0.14	0.12	0.13	0.12
Econ. or Political Organisation	NA	0.24	0.35	0.36	0.73	0.63	0.73	0.69	0.72	0.69
Legal Syst. Origin	0.03	-0.05	-0.01	-0.07	-0.10	-0.09	-0.11	-0.12	-0.10	-0.09
Shared History	0.16	0.07	0.08	0.05	-0.02	-0.05	-0.01	-0.02	0.00	0.02
Common Language	0.15	-0.05	0.03	0.00	-0.08	-0.07	-0.09	-0.09	-0.09	-0.07
Cultural Distance Index	-0.10	-0.04	-0.06	-0.04	-0.19	-0.07	-0.12	-0.11	-0.14	-0.13
Bilateral trust	**1.00**	0.19	0.11	-0.27	0.42	0.41	0.52	0.33	0.52	0.51
International Phone Calls/cap		**1.00**	0.50	-0.01	0.28	0.43	0.53	0.53	0.52	0.55
FT circulation per capita			**1.00**	0.12	0.37	0.43	0.55	0.55	0.53	0.55
Bilateral tax treaties				**1.00**	0.31	0.24	0.33	0.29	0.32	0.28
Voice and Accountability					**1.00**	0.77	0.84	0.84	0.84	0.82
Political Stability						**1.00**	0.82	0.80	0.85	0.82
Government Effectives							**1.00**	0.93	0.97	0.97
Regulatory Quality								**1.00**	0.92	0.91
Rule of Law									**1.00**	0.97
Control of Corruption										**1.00**

Table 3.8d. Correlation table for FDI inflows panel data used in chapters 4 and 5 (continues from table 3.9b)

The table reports the correlation coefficients with the robustness variables used in the FDI Inflows regression analysis

	Bilateral trust	International Phone Calls/cap	FT circulation per capita	Bilateral tax treaties	Voice and Accountability	Political Stability	Government Effectives	Regulatory Quality	Rule of Law	Control of Corrupt
L FDI inflows	0.10	0.23	-0.02	0.30	0.18	0.07	0.23	0.17	0.22	0.24
L GDP of FDI Receiving country	-0.23	-0.05	-0.32	0.14	-0.16	-0.34	-0.03	-0.22	-0.07	-0.04
L GDP of FDI Sending country	-0.15	0.08	-0.15	0.31	-0.02	-0.04	-0.02	-0.05	0.00	0.01
Trade Openness of the FDI Rec. country	0.20	0.34	0.69	-0.13	0.30	0.45	0.28	0.48	0.28	0.23
Trade Openness of the FDI Send. country	0.15	0.03	0.01	-0.14	0.01	-0.01	-0.02	0.01	-0.01	-0.02
L Distance	-0.34	-0.14	-0.07	-0.10	-0.14	-0.12	-0.09	-0.09	-0.11	-0.10
Location on Same continent	NA	0.05	-0.03	0.13	0.01	0.01	-0.02	-0.03	-0.01	-0.01
Shared Border	0.06	0.07	-0.02	0.02	0.01	0.01	0.00	-0.01	0.00	0.00
Econ. or Political Organisation	-0.04	0.12	-0.09	0.30	0.00	-0.01	0.00	-0.02	0.01	0.02
Legal Syst. Origin	0.03	-0.03	0.08	-0.13	-0.04	-0.04	-0.02	-0.01	-0.05	-0.03
Shared History	0.13	0.00	0.08	-0.04	0.04	0.00	0.06	0.03	0.05	0.06
Common Language	0.15	0.07	0.10	-0.01	-0.02	-0.03	0.05	0.03	0.03	0.03
Cultural Distance Index	-0.14	-0.03	-0.02	0.01	0.04	0.05	-0.01	0.02	-0.01	0.01
Bilateral trust	**1.00**	0.28	0.12	-0.33	0.43	0.41	0.49	0.34	0.51	0.50
International Phone Calls/cap		**1.00**	0.54	0.07	0.60	0.49	0.68	0.69	0.65	0.66
FT circulation per capita			**1.00**	-0.13	0.40	0.49	0.54	0.64	0.53	0.51
Bilateral tax treaties				**1.00**	-0.03	-0.09	0.01	-0.05	-0.03	0.01
Voice and Accountability					**1.00**	0.83	0.86	0.85	0.89	0.87
Political Stability						**1.00**	0.79	0.77	0.83	0.80
Government Effectives							**1.00**	0.87	0.96	0.96
Regulatory Quality								**1.00**	0.85	0.88
Rule of Law									**1.00**	0.96
Control of Corruption										**1.00**

Table 3.9. Correlation table for FDI outflows panel data used in the econometric analysis in chapter 6
The table reports the correlation coefficients of the various variables used in the analysis in chapter 6. The rest of the coefficients are were shown previously in table 3.9a.

	|FDIoutfl. i,j,t / GDPi – FDIoutfl.jpn,j,t / GDPjpn|	|FDIoutfl. i,j,t / GDPi – FDIoutfl.uk,j,t / GDPuk|	|FDIoutfl. i,j,t / GDPi – FDIoutfl.usa,j,t / GDPusa|	LTotal Eur. FDI outfl. to j(- i) at t	L Total Eur. FDI outfl. to j(- i) at t -1	L PEI in the rec. country t-1	L PEI in the rec. country t	L PEI in the rec. country t-2	L PEI in the rec. country t-3
|FDIoutfl. i,j,t / GDPi – FDIoutfl.jpn,j,t / GDPjpn|	**1.00**								
|FDIoutfl. i,j,t / GDPi – FDIoutfl.uk,j,t / GDPuk|	1.00	**1.00**							
|FDIoutfl. i,j,t / GDPi – FDIoutfl.usa,j,t / GDPusa|	1.00	1.00	**1.00**						
Total Eur. FDI outfl. to j(- i) at t	NA	0.01	0.03	**1.00**					
Total Eur. FDI outfl. to j(- i) at t -1	NA	-0.04	-0.06	0.46	**1.00**				
L PEI in the rec. country t	0.00	0.02	0.01	0.06	-0.05	**1.00**			
L PEI in the rec. country t-1	0.02	0.01	0.00	0.06	-0.06	0.21	**1.00**		
L PEI in the rec. country t-2	0.02	0.01	0.03	0.07	-0.07	0.21	0.23	**1.00**	
L PEI in the rec. country t-3	-0.03	0.00	0.01	0.08	-0.10	0.10	0.22	0.22	**1.00**
L FDI inflows	0.37	-0.07	-0.02	0.30	0.09	0.12	0.13	0.13	0.12
L GDP of FDI Receiving country	0.16	0.07	0.10	**0.64**	0.03	0.24	0.23	0.25	0.24
L GDP of FDI Sending country	-0.70	-0.50	**-0.56**	-0.06	0.15	-0.02	-0.01	-0.01	0.00
Trade Openness of the FDI Rec. country	-0.05	0.05	0.04	-0.21	-0.05	-0.05	-0.04	-0.07	-0.11
Trade Openness of the FDI Send. country	-0.43	-0.31	-0.32	-0.07	0.15	-0.06	-0.05	-0.06	-0.05
L Distance	0.01	-0.10	-0.12	-0.03	0.02	0.00	0.01	0.02	0.00
Location on Same continent	0.05	0.10	0.14	NA	0.01	0.00	0.00	-0.01	0.01
Shared Border	NA	0.01	0.03	0.04	0.01	0.01	0.01	0.01	0.01
Econ. or Political Union	0.26	0.05	0.09	0.30	-0.02	0.14	0.14	0.15	0.16
Legal Syst. Origin	0.38	0.03	0.04	-0.02	0.03	-0.02	-0.03	-0.03	-0.03
Shared History	0.23	0.00	0.02	0.05	-0.05	0.03	0.03	0.03	0.02
Common Language	0.17	0.04	0.04	-0.04	-0.01	0.00	-0.01	0.00	0.00
Cultural Distance Index	-0.22	-0.06	-0.08	-0.03	0.12	-0.03	-0.04	-0.03	-0.04

Table 3.10a. Correlations table for FDI outflows panel data used in chapter 7

The table reports the correlation coefficients of the variables as used in the FDI outflows regression analysis in chapter 7.

	Binary (FDI relationship)	L GDP of FDI Receiving country	L GDP of FDI Sending country	Trade Openness of the FDI Rec. country	Trade Openness of the FDI Send. country	L Distance	Location on Same continent	Shared Border	Econ. or Political Organisation	Legal Syst. Origin	Common Language	Shared History	Cultural Distance Index
Binary (FDI relationship)	**1.00**												
L GDP of FDI Receiving country	0.26	**1.00**											
L GDP of FDI Sending country	-0.06	-0.02	**1.00**										
Trade Openness of the FDI Rec. country	-0.05	-0.28	-0.02	**1.00**									
Trade Openness of the FDI Send. country	0.12	-0.02	-0.39	0.12	**1.00**								
L Distance	-0.26	0.03	0.15	-0.13	-0.10	**1.00**							
Location on Same continent	0.25	-0.05	-0.10	0.12	0.02	**-0.81**	**1.00**						
Shared Border	0.15	0.04	-0.02	0.01	-0.01	-0.45	0.28	**1.00**					
Econ. or Political Organisation	0.37	0.32	0.03	-0.10	-0.05	-0.35	0.45	0.21	**1.00**				
Legal Syst. Origin	0.07	-0.02	-0.02	-0.05	0.02	-0.06	-0.03	0.17	0.00	**1.00**			
Common Language	0.13	0.06	0.16	-0.02	-0.07	0.02	-0.05	0.18	0.00	0.36	**1.00**		
Shared History	0.12	0.03	0.03	-0.03	-0.08	-0.06	-0.06	0.16	-0.02	0.30	0.43	**1.00**	
Cultural Distance Index	-0.02	-0.06	0.00	0.10	0.07	0.08	-0.04	-0.18	-0.15	-0.30	-0.18	-0.12	**1.00**

Table 3.10b. Correlations table for FDI inflows panel data used in chapter 7

The table reports the correlation coefficients of the variables as used in the FDI inflows regression analysis in chapter 7.

	Binary (FDI relationship)	L GDP of FDI Receiving country	L GDP of FDI Sending country	Trade Openness of the FDI Rec. country	Trade Openness of the FDI Send. country	L Distance	Location on Same continent	Shared Border	Econ. or Political Organisation	Legal Syst. Origin	Common Language	Shared History	Cultural Distance Index
Binary (FDI relationship)	**1.00**												
L GDP of FDI Receiving country	0.26	**1.00**											
L GDP of FDI Sending country	-0.06	-0.02	**1.00**										
Trade Openness of the FDI Rec. country	-0.05	-0.28	-0.02	**1.00**									
Trade Openness of the FDI Send. country	0.12	-0.02	-0.39	0.12	**1.00**								
L Distance	-0.26	0.03	0.15	-0.13	-0.10	**1.00**							
Location on Same continent	0.25	-0.05	-0.10	0.12	0.02	**-0.81**	**1.00**						
Shared Border	0.15	0.04	-0.02	0.01	-0.01	-0.45	0.28	**1.00**					
Econ. or Political Organisation	0.37	0.32	0.03	-0.10	-0.05	-0.35	0.45	0.21	**1.00**				
Legal Syst. Origin	0.07	-0.02	-0.02	-0.05	0.02	-0.06	-0.03	0.17	0.00	**1.00**			
Common Language	0.13	0.06	0.16	-0.02	-0.07	0.02	-0.05	0.18	0.00	0.36	**1.00**		
Shared History	0.12	0.03	0.03	-0.03	-0.08	-0.06	-0.06	0.16	-0.02	0.30	0.43	**1.00**	
Cultural Distance Index	-0.02	-0.06	0.00	0.10	0.07	0.08	-0.04	-0.18	-0.15	-0.30	-0.18	-0.12	**1.00**

3.4. Correlation among the variables

The correlation matrix for inflows and outflows as used in the empirical analysis in chapters 4-7, are shown in tables 3.8 through to 3.10. Very high correlation among the variables may cause multicolinearity which in turn will yield biased results. The correlation matrix shows the correlation among the variables in the form in which they are used in the regressions i.e. as logarithms, etc.

Dependent variables

FDI outflows

The correlation relationship of the FDI outflows with the other variables shows a positive correlation to the GDP of the FDI outflows receiving and sending country while there's a negative correlation relationship with the openness of both outflows sending and receiving countries. Identically with FDI inflows, there is a negative relationship to the distance variable and a positive one to the border and same continent variables within the physical proximity variables group. There is also a positive correlation relationship with four variables in the near-home bias variables group while a negative one with the cultural distance index.

FDI inflows

The correlation matrix of the FDI inflows with the other variables shows a positive relationship with the GDP of both the FDI sending and receiving country. It also shows a negative relationship with the trade openness of both the FDI sending and receiving country. FDI inflows have a negative correlation with the distance variable from the proximity variables and a positive one with the same continent and border variables. There is a positive correlation relationship with four of the near-home bias variables (same economic and

political organisation, same legal system origin, common language and shared history) and a negative one with the cultural distance index.

Independent variables

Data on institutional and cultural variables

The membership in the same economic or political organisation dummy is negatively correlated to the same origin of the legal system dummy and common language dummy and positively to the shared history dummy. It is also strongly positively correlated to the GDP of the FDI inflows sending and FDI outflows receiving country. The same origin of the country's legal system dummy is strongly positively correlated to the shared history and common language dummies while the Shared History Dummy variable is positively correlated to the other variables in the near-home bias group. The Common Official or Minority Language Dummy is positively correlated to the other dummies in this near-home bias variable group, except the economic organisation dummy and CD index. None of the correlations coefficients show levels of correlation that might cause multicollinearity.

Data on physical proximity variables

The distance is predominantly negatively correlated to the other variables such as the dependent variables, FDI inflows and outflows, the exports and the other two variables from the proximity group, same continent and border and with three out of four near-home bias variables: same economic and political organisation, same legal system origin, and shared history. It is only positively correlated with the common language dummy variable and the two GDP variables of the FDI flows receiving and sending country. The same continent dummy is positively correlated with the exports of both FDI flows receiving and sending countries. This dummy is positively correlated with the shared border dummy but strongly

negatively with the distance variable (-0.81). It is strongly positively correlated with the economic and political organisation dummy while it is negatively correlated with the other three variables from the near-home bias group. The Shared Border Dummy is positively correlated to the other variables in the near-home bias group.

Data on macroeconomic variables for FDI outflows

The GDP of the receiving country has a negative correlation relationship with the GDP of the FDI outflows sending country and the openness of the receiving country while a positive one to the openness of the FDI inflows sending country. The GDP of the sending country has a negative correlation relationship with the GDP of the FDI outflows receiving country and the openness of the sending country while a positive one to the openness of the FDI outflows receiving country. The openness of the receiving country has a negative correlation relationship with the openness of the sending country and with the distance.
The openness of the sending country has a negative correlation relationship with the openness of the receiving country and with the distance. None of these variables report a worrying level of correlation.

Data on macroeconomic variables for FDI inflows

The GDP of the receiving country has a negative correlation relationship with the GDP of the FDI inflows sending country and the openness of the receiving country while a positive one to the openness of the FDI inflows sending country. The GDP of the sending country has a negative correlation relationship with the GDP of the FDI inflows receiving country and the openness of the sending country while a positive one to the openness of the FDI inflows receiving country. The openness of the receiving country has a negative correlation relationship with the openness of the sending country and with the distance.

The openness of the sending country has a negative correlation relationship with the openness of the receiving country and with the distance.

3.5. Conclusion

The dataset in this thesis is unbalanced panel data built around the 2008 edition of the OECD FDI flows dataset. Aside from the OECD, FDI data are also provided by the United Nations Commission for Trade and Development (UNCTAD) as well as the World Bank. The World Bank's datasets provide one-sided data on FDI as opposed to the bilateral country databases also available from other sources. The choice of the OECD database was made for a couple of reasons: it contains a country-wide and time-lengthy source of bilateral FDI country data; unlike the UNCTAD datasets, it provides the data in both the national currency and in a common world currency (US dollars) which helps avoid potential bias when researchers individually convert data to a common currency and finally, the OECD also provides the data when the countries have reported a zero-FDI relationship which is very beneficial for the analysis in chapter 7.

As with other databases, it has a few limitations as well: it is compiled from the point of view of the OECD member countries and therefore the outflows originate from the OECD members and go to the rest of the world partner countries and the inflows originate from the rest of the world partner countries and are directed towards the OECD member countries. The dataset therefore doesn't cover the FDI flows between country pairs in the world that aren't members of the OECD. The second limitation of the dataset comes from the fact that it is an unbalanced panel. Some of the OECD countries have provided less data than other member countries especially when it comes to the first half of the data (1981-1993).

I consider both FDI inflows and outflows for two main reasons; the first reason is to compare the general results and try to eliminate some of the aforementioned unevenness due to the

nature of the data as well as strengthen and generalise the findings; the second reason is to capture any effects that might not have been captured by analysing either the FDI outflows or FDI inflows due to the unbalanced nature of this panel data. In some analyses it is imprudent or impossible to consider the FDI inflows, such as in chapters 5 and 6 because of the limited country variability that they create.

Table 3.11 contains a full list of all variables that are used in the estimations in the next chapters. This table shows the full variable name, its short form used in the tables that report the results as well as its brief definition and the source where it was obtained from.

Table 3.11. Alphabetical list of all variables in this thesis

VARIABLE	VARIABLE CODE	DEFINITION/DESCRIPTION OF THE VARIABLE	SOURCE
Binary dummy variable for FDI inflows and outflows	Binary_relationship	A binary dependent variable taking values 0 if the bilateral country pair doesn't have an FDI relationship (zero FDI flows) or 1 if there is a positive FDI flow between the two countries in the country pair.	Author calculated from data on FDI flows from the OECD database.
Common Language	langcom	Dummy with value one if the two countries share a common official language or if a language is spoken by at least 9% of the population in both partnering countries, zero otherwise;	Author developed dummy with data from www.cepii.fr
Cultural Distance Index	CDindex	Index comprised of Hofstede's (1980) 4 cultural distance indicators. Index calculated following (Kogut and Singh, 1988)	www.geert-hofstede.com/
Difference in FDI outflow of country i to country j from the world leader's FDI outflows to country j (USA)	AbsDiffUSA	FDI outflows from country i to j at time t over the GDP of country i at time t, *minus* the FDI outflows of the world leader in FDI investments (United States of America) to country j at time t over the GDP of USA at time t.	Author calculated from data on FDI flows from the OECD database and data on GDP from the World Development Indicators (2008).

Difference in FDI outflows of country i to country j from the regional leader's FDI outflows to country j (UK)	AbsDiffUK	FDI outflows from country i to j at time t over the GDP of country i at time t, *minus* the FDI outflows of the world leader in FDI investments (United States of America) to country j at time t over the GDP of USA at time t.	Author calculated from data on FDI flows from the OECD database and data on GDP from the World Development Indicators (2008).
Difference in FDI outflow of country i to country j from the regional leader's FDI outflows to country j (Japan)	AbsDiffJPN	FDI outflows from country i to j at time t over the GDP of country i at time t, *minus* the FDI outflows of the world leader in FDI investments (United States of America) to country j at time t over the GDP of USA at time t.	Author calculated from data on FDI flows from the OECD database and data on GDP from the World Development Indicators (2008).
Distance between partner countries	Dist	Geodesic distances between the two countries in the bilateral country pair; in kilometers;	www.cepii.fr
FDI inflows (inflows towards the OECD member)	FDIinfl	FDI Inflows to the OECD member country from the FDI sending (partner) country.	OECD
FDI outflows (outflows from the OECD member)	FDIoutfl	FDI Outflows from the OECD member country to the receiving (partner) country.	OECD
GDP for the FDI inflows receiving country	GDPrec	Gross Domestic Product for the FDI inflows receiving country at constant 2000 prices, in US$ million; series code (NY.GDP.MKTP.KD)	World Development Indicators (2008)
GDP for the FDI inflows sending country	GDPsend	Gross Domestic Product for the FDI inflows sending country at constant 2000 prices, in US$ million; series code (NY.GDP.MKTP.KD)	World Development Indicators (2008)
GDP for the FDI outflows receiving country	GDPrec	Gross Domestic Product for the FDI outflows receiving country at constant 2000 prices, in US$ million; series code (NY.GDP.MKTP.KD)	World Development Indicators (2008)
GDP for the FDI outflows sending country	GDPsend	Gross Domestic Product for the FDI outflows sending country at constant 2000 prices, in US$ million; series code (NY.GDP.MKTP.KD)	World Development Indicators (2008)
Portfolio Equity Investment for the FDI outflows receiving country	PFOinv	Portfolio investment flows are net and include non-debt-creating portfolio equity flows (the sum of country funds, depository receipts, and direct	World Bank, Global Development Finance

at time t		purchases of shares by foreign investors) for the year t. Data are in current U.S. dollars	
Same Continent	samecont	Dummy with value one if the two countries in the pair are on the same continent, zero otherwise.	www.cepii.fr
Same origin of the legal system for the two countries in the bilateral country pair	Legorsame	A dummy set to gain value of one if the legal system is of same origin in the FDI sending and receiving country in the bilateral pair.	data are from prof. La Porta: [http://mba.tuck. dartmouth.edu/ pages/faculty/ rafael.laporta/ publications.html]
Shared Border	Border	A dummy variable that has the value of 1 and 0 otherwise if a border is shared between the FDI receiving and sending countries.	www.cepii.fr
Shared History	samehist	Dummy with value one if the two countries in the pair share the same history, zero otherwise.	Author developed variable using data from www.cepii.fr
Shared membership in an economic or political organisation	ecorgsame	Dummy set to gain value of one if the two countries in the pair are members of the same economic or political organisation [OECD, EU, Commonwealth, NAFTA], zero otherwise.	Author developed variable using data from organisations' websites
Total European FDI outflows to country j (minus country i) at time t	$FDI_{EUR,j(-i),t}$	Sum of FDI outflows from all regional (European) countries to country j (FDI receiving country) at time t, excluding the country i (that's on the dependent variables side). In US$ million.	Author calculated from data on FDI flows from the OECD database.
Trade openness for the receiving country	EXIMrec/ GDPrec	Exports of goods and services plus Imports of goods and services for FDI flows receiving country divided by its GDP;	World Development Indicators (2008)
Trade openness for the sending country	EXIMsend/ GDPsend	Exports of goods and services plus Imports of goods and services for FDI flows sending country divided by its GDP;	World Development Indicators (2008)

4. Near-Home Bias in FDI flows

The following chapter establishes the model which will be used to investigate the impact of the near-home bias variables on FDI flows. It starts by elaborating on the theoretical background of the model and how it can be applied in this case and is followed by an overview of the econometric representation of the regressions that will be estimated.

4.1. Theoretical background of the model

The basis for the model that will be developed to test near-home bias in FDI is the gravity model. It is called the gravity model because it predicts that certain economic categories that occur between two places, such as trade flows will behave according to natural laws, the attraction between any two objects will be determined by their mass and distance. Its origins are in physics, in Newton's second law of gravity and it was first introduced in economics by Ian Tinbergen (1962). He developed the gravity model to explain international trade flows between bilateral country pairs. Although it has many variations (Bergstrand, 1985) the basic analogy of its two main parts, the mass of two objects and their distance are maintained in the basis for this model. In economics the mass is proxied with the country's size and economic power and the distance is measured between two geographic places that have an economic relationship. The model varies in the added variables which serve to explain the research question. The widespread use of the model in international economics and economics of trade flows is due to the model's borrowed intuition from the natural sciences.

4.1.1. Gravity Model in Physics

The gravity model in physics is Newton's second law of gravity [Motta, 1729] devised in 1678 which states that the attraction between two objects is a result of the objects' mass and the distance between them. Newton's second law of gravity is written as follows:

$$F_{i,j} = G \frac{M_i^\alpha M_j^\beta}{D_{ij}^\theta}$$

(4.1)

Where F_{ij} is the force of attraction between the two objects i and j; M_i and M_j are the masses or sizes of the two objects, D_{ij} is the distance between them while G is a constant that represents Earth's gravity force. From the equation it can be said that the bigger their mass the higher the force of attraction between them and the bigger the distance between them the lesser is the force of attraction. This basic relation between an object's mass and its distance from other objects was further developed by Tinbergen (1962) as the basis for a natural relationship between two objects in economics. In economics these two objects can be any number of things that have an interaction - countries, cities, companies and people as well as in any number of relationships between them: general trade, imports, exports or direct investment. The ingenuity of this model is that it follows a natural law that can be found everywhere between physical objects and applies it to economic flows. Economics however, isn't predominantly a natural science, but rather a social science and as such the relationships between economic categories are much more complex than that of two physical objects and that's why other contributing factors must be added to the existing natural relationship between economic categories.

4.1.2. Gravity Model in International Trade

The gravity model in international trade is often claimed to be the single most successful empirical device (Anderson, 1979). This gravity model was introduced by Tinbergen (1962) for the purpose of an economic analysis of international trade flows. Tinbergen was a physicist working on his doctoral thesis in economics in the Netherlands. He developed the model by assigning an economic counterpart for each of the variables used in the Newton's second law of gravity that would be used in physics to explain the attraction between two objects and created the model that can explain the driving force behind the trade attraction for two countries. The mass of the two objects can be represented in economics with the GDP of two countries that are engaged in some relationship as the GDP of a country is an excellent indicator of the economic might or pull of that country. The distance between two objects is the distance between two countries or any two geographically different places (cities or agglomerations, countries, states, factories, regions) that have an economic relationship. When equation (1) is transformed into a logarithmic form I get the following functional form of the gravity model that can be used to explain the magnitude of trade flows between two countries:

$$\log F_{ij} = \log M_i + \log M_j - \log D_{ij} + u_{i,j} \tag{4.2}$$

Where F_{ij} is the trade flow (imports, exports, net exports and similar variations) from origin i to destination j; M_i and M_j are the relevant economies' sizes (M is usually measured as the gross domestic product (GDP) or GDP per capita and similar variations); D_{ij} is the distance between the geographical locations of the two partner countries (usually measured centre to centre or with a tailored formula that includes the whole country area) (Head and Mayer, 2002) and $u_{i,j}$ is the error term. When two countries are closer to each other there is a natural

attraction between them to exchange goods as opposed to an exchange with countries that are far away. This is because there is greater familiarity and ease in the exchange that is proximate and it occurs at a lesser cost. Exacerbated trade among proximate countries also occurs because of higher probability that these countries are similar and trade is facilitated because of such greater familiarity.

The model is generally very widely used in international trade literature and its success is due to its high explanatory power and a very general applicability in all sorts of economic relationships such as the one that occurs in cross – border direct investment (Anderson, Wincoop, 2003). The same model can be applied in FDI because like in international trade there exists a similar economic relationship between two geographic locations and economic entities. In the case of FDI the flow between the countries takes the form of a direct investment which has its particularities (ownership change) as opposed to a simple exchange of goods. Thus the factors that determine the FDI relationship will be slightly different than the ones in international trade. In the case of FDI the nature of the exchange has a more permanent character than that in international trade which can be quite temporary and so we would naturally expect this decision to be more influenced by familiarity factors. Entering into a direct investment abroad requires commitment of resources for a longer period of time and it is to be expected that decision makers in corporations will feel more comfortable investing in locations where they feel more familiar with the investment process and environment. The FDI decision is a more serious and complex one compared to trade because the countries can't discontinue it as easily. This will reflect itself in the choice of locations for direct investment. Decision makers will be more comfortable investing in locations where they feel more acquainted with the market.

4.1.3. Gravity Model for Foreign Direct Investment

Following this general premise of two main factors, mass and distance I can say that the FDI flows are a function of the size of the respective economies in bilateral country pairs and the distance between them as well as other contributing factors. Following this, the general gravity model (Tinbergen, 1962) from equation (4.2) for FDI flows is written as follows:

$$\log F_{i,j,t} = \log M_{i,t} + \log M_{j,t} - \log D_{ij} + u_{i,j,t} \tag{4.3}$$

Where $F_{i,j,t}$ are FDI flows from country i towards country j at time t [the FDI flows can be represented with a variation in measure such as FDI as a percentage of GDP or the total trade (exports + imports]; $M_{i,t}$ and $M_{j,t}$ are country's i and j's GDP at time t, respectively [this is the measure for the size of the country and it can be also represented by GDP per capita or other measures for the country's economic size such as the stock markets' capitalisation]; Dij is the distance between the two countries that have an FDI relationship [the measure of distance between two countries is usually done by calculation of the physical distance between the two countries or is approximated by their location within a region or continent or proximity can also be represented by a shared border variable]. $u_{i,j,t}$ stands for the error term.

The model also contains the time element (the variables vary across time and country) because most commonly FDI studies are done using panel data and both the cross section and time series are reflected in the models. All gravity models based FDI studies include variables to represent the countries' mass and economic power such as the country's GDP, GDP per capita, exports, imports or net exports as well as distance proxies. There is a great variety in terms of additional variables among FDI studies that use the gravity model. From the additional variables to the gravity model, studies differ according to the research question

(Blonigen, 2005). If the data are region-determined (Bevan and Estrin, 2004) then the additional variables will include determinants particular to that case such as average industry wages, labour skills, technological progress and development, natural resource abundance, political risks or if the focus of the study is on the financial incentives and the finance structure of the investment (Bertrand et al. 2004), than it will include variables on tax rates or wages or interest rates.

Having FDI literature determinants in mind, in addition to the two main gravity model-comprising variables, the GDP and distance, when forming this model for near-home bias in FDI, I add some other variables. In addition to the main macroeconomic influence of the countries' economic power represented by the GDP I add a variable for the country openness comprised of the country's exports and imports to be used as a proxy for the countries' "openness" or propensity to trade at time t. The openness to trade of a country is usually measured with a variable containing exports and imports however, in some cases it can be represented by the country's interest rate spread, bond yield spread or trading volume depending on the focus of the research question.

I use two additional variables to measure the distance between two countries: a dummy variable for a shared border between the country pairs and a dummy variable that captures if the two countries in the bilateral pair are on the same continent. The additional variables are included in order to capture certain particularities (such as the regional location of the countries) of the geographic proximity not already captured by the physical distance in kilometres.

In the case of this study, the aim is to test whether greater familiarity between two countries intensifies their FDI relationship. This familiarity creates a near-home bias for a country in that it will affect the chosen location for FDI. This near-home bias can be represented through a group of variables that will capture any similarities that may exist between countries in

several areas such as: their institutions or legal system similarity; their economic and institutional development through membership in political and economic organisations and organisations, their cultural and linguistic similarity or social similarity that may occur because of some past historical occurrence.

4.2. A modified gravity model for near-home bias in FDI

This section establishes the econometric specification of the model in the analysis of near-home bias in FDI flows. The purpose is to examine the influence of near-home bias on FDI flows over a given period of time. I argue that the FDI flows are determined by a set of macroeconomic factors, physical distance between two countries and also they are a function of a set of near-home bias variables that capture the preference of the direct investors for investing in familiar places.

Therefore, it can be said that the near-home bias in FDI flows is a function of:

FDI flows = f (macroeconomic factors; physical proximity factors, institutional factors and cultural factors)

The econometric model in this thesis, considering these three sets of factors, economic size and might, proximity and near-home bias, can be written as follows:

$$\text{FDI}_{i,j,t} \text{ (inflows) } = \beta_0 + \beta_1(\gamma_1) + \beta_2(\gamma_2) + \beta_3(\gamma_3) + \beta_4(\gamma_4) + u_{i,j,t} \tag{4.4a}$$

$$\text{FDI}_{i,j,t} \text{ (outflows) } = \beta_0 + \beta_1(\gamma_1) + \beta_2(\gamma_2) + \beta_3(\gamma_3) + \beta_4(\gamma_4) + u_{i,j,t} \tag{4.4b}$$

Where: $\text{FDI}_{i,j,t}$ is the FDI inflows or FDI outflows from country i to j at time t; γ_1 is for the macroeconomic variables that denote the economic pull or strength of the country. I use two macroeconomic variables: the GDP, the country trade openness; γ_2 is for the three geographical proximity variables, distance between the country pairs, a shared border dummy

and a same continent dummy. The next set of variables, denoted by γ_3 is for the institutional proximity variables. It includes two variables: same origin of the country's legal system and common membership to a political or economic organisation between the country pairs. The fourth group (γ_4) is called the cultural proximity group of variables and it includes: shared language, common history between the country pairs and a cultural distance index. Finally, $u_{i,j,t}$ stands for the error term component that has a time and cross sectional component due to the fact that the analysis is based on panel data. The variables used in the model were previously discussed and described in greater detail in chapter 3.

I use the general gravity model framework in order to test for the influence of near-home bias factors in FDI flows. Home bias can be measured from different perspectives, as under or overweighting of investments (French & Poterba, 1991) or as the preference to invest in nearby, familiar and close to home places (Anderson et al., 2011). If we consider the fact that FDI by definition occurs abroad then the home bias phenomenon in its original form as preference to invest locally within the same country cannot be applied to FDI. Therefore in this sense in the case of FDI, the term near-home bias in this thesis has a geographical attribute; it is a neighbourhood bias and denotes the preference to invest in familiar places hence the use of the term near-home bias.

The physical, institutional and cultural proximity groups of variables contain variables that depict certain influences on FDI flows which create greater familiarity between two countries. This will enhance or promote an FDI relationship. I use the term near-home bias to denote the effect of those variables because it reflects how a country's geo-position, socio-political and cultural circumstances may influence or create a bias in its relationship with other countries in terms of FDI. By including these variables I intend to show whether some additional and non-economic factors affect corporate decision makers in such a way that they would prefer making foreign direct investments in countries that are more similar to their

own. The significance of adding these variables is that it has direct impact on specific policies for countries that wish to attract more FDI, something that is further tested in chapter 7.

4.3. Econometric Specifications

To examine the impact of near-home bias on FDI flows I estimate the following regression specification using OLS panel estimators with fixed effects as suggested by the Hausman test (Hausman, 1978). I use cross-sectionally clustered White standard errors (White, 1980) in order to control for the heteroskedasticity that comes from the country variability (Wooldridge, 2002).

$Log\ (FDI\ outflows_{i,j,t}) = \beta_0\ +$
$\beta_{11}\ log\ (GDPrec) + \beta_{12}\ log\ (GDPsend) + \beta_{13}\ log\ (Openness\ rec) + \beta_{14}\ log\ (Openness\ send) +$
$\beta_{21}\ log\ (DIST_{i,j}) + \beta_{22}\ SAMECONT + \beta_{23}\ BORDER +$
$\beta_{31}\ ECONORGD + \beta_{32}\ LEGALOR +$
$\beta_{43}\ SAMEHIST + \beta_{44}\ COMLANG + \beta_{45}\ CDindex\ + \varepsilon_{i,j,t}$ \hfill (4.5a)

$Log\ (FDI\ inflows_{i,j,t}) = \beta_0\ +$
$\beta_{11}\ log\ (GDPrec) + \beta_{12}\ log\ (GDPsend) + \beta_{13}\ log\ (Openness\ rec) + \beta_{14}\ log\ (Openness\ send) +$
$\beta_{21}\ log\ (DIST_{i,j}) + \beta_{22}\ SAMECONT + \beta_{23}\ BORDER +$
$\beta_{31}\ ECONORGD + \beta_{32}\ LEGALOR +$
$\beta_{43}\ SAMEHIST + \beta_{44}\ COMLANG + \beta_{45}\ CDindex\ + \varepsilon_{i,j,t}$ \hfill (4.5b)

Where log (*FDI outflows_{i,j,t}*) is the logarithm of the levels of FDI outflows in millions of US dollars from country i to j at time t; log (*FDI inflows_{i,j,t}*) is the logarithm of the levels of FDI inflows in millions of US dollars to country i from j at time t. Log (*GDPrec*) is the logarithm of the GDP levels in millions of constant US dollars for the FDI receiving country. Log (*GDPsend*) is the logarithm of the GDP levels in millions of constant US dollars for the FDI sending country. Log (*Openness rec*) is the ratio of the exports plus imports over GDP for the

FDI receiving country. Log (*Openness send*) is the ratio of the exports plus imports over GDP for the FDI sending country. Log (*DIST*) represents the logarithm of the distances between the two counties i and j in the bilateral country pairs. *SAMECONT* is a dummy variable that takes the value of one if the two countries in the bilateral country pair are on the same continent. *BORDER* is a dummy variable if the two countries in the bilateral country pair share a border. *ECONORGD* is a dummy variable that has a value of one if the two countries in the bilateral country pair are members of an economic or political organisation (EU, OECD, the Commonwealth or NAFTA). *LEGALOR* is a dummy variable that takes the value of one if the two countries in the bilateral country pair have the same legal system origin. *COMLANG* is a dummy variable that takes the value of one if the two countries in the pair share the same language and *SAMEHIST* is a dummy that has the value of one if the two countries in the bilateral country pair share history. CDINDEX represents the cultural distance index as developed by Kogut and Singh (1988) based on data by Hofstede (1980) between country i and j.

4.4. Additional Variables

In order to test for the effects of asymmetric information and the costliness of doing business in a particular location I conduct the analysis from 4.5.a/b with a number of additional variables and estimate the following model:

$$FDI_{i,j,t} \text{ (outflows)} = \beta_0 + \beta_1(\gamma_1) + \beta_2(\gamma_2) + \beta_3(\gamma_3) + \beta_4(\gamma_4) + \beta_5(\gamma_5) + u_{i,j,t} \qquad (4.6a)$$

$$FDI_{i,j,t} \text{ (inflows)} = \beta_0 + \beta_1(\gamma_1) + \beta_2(\gamma_2) + \beta_3(\gamma_3) + \beta_4(\gamma_4) + \beta_5(\gamma_5) + u_{i,j,t} \qquad (4.6b)$$

Where all the variable groups are as denoted previously and γ_5 can denote any of the following variables: bilateral trust index, international phone minutes per capita for the FDI receiving country, Financial Times circulation per capita for the FDI receiving country,

bilateral tax treaties and any of the six country governance indicators including: voice and accountability, political stability, government effectiveness, regulatory quality, rule of law and control for corruption. Due to data unavailability, these variables significantly lower the total number of observations compared to the previous regression model in 4.5.a/b. Also, unlike the other variables these additional ones aren't bilateral (except for the bilateral tax treaties), they are one-sided i.e. for the FDI receiving country only.

4.5. Econometric Estimation

This section gives an overview of the econometric framework for analysing the research questions within the proposed panel dataset in this chapter. This discussion is also relevant and refers to the analysis in chapters 5 and 6 as well. Using panel data over a cross sectional analysis will allow a greater flexibility in modelling the behaviour across countires (Greene, 2008, p.182). All of the econometric estimations in this thesis are performed using Eviews (versions 6 and 7).

4.6.1 Fixed vs. Random effects

Given the nature of the research question and the panel dataset, when it comes to a large cross section it is reasonable to expect that there will be individual effects (Greene, 2008). There are a lot of country data across many years. This points to the fact that there might be certain periods with stronger explanatory power. Panel regressions with fixed effects models have the advantage of taking into account the country-specific heterogeneity (Baltagi, 2001). The basic framework (Greene, 2008, p.182) for analysing panel data models takes the following form:

FDI flows $_{i,j,t} = \mathbf{\Gamma}^{'}_{i,j,t}\beta + c_i + \varepsilon_{i,j,t}$ (4.7)

where: $\mathbf{\Gamma}'_{i,j,t}$ is a vector of the regressors not including the constant term. When expanded to the model the equation takes the following form:

FDI flows $_{i,j,t} = \beta_0 + \gamma_{i,j,t}\beta_1 + \gamma_{i,j,t}\beta_2 + \gamma_{i,j,t}\beta_3 + \gamma_{i,j,t}\beta_4 + c_{i,j} + \varepsilon_{i,,j,t}$

(4.8)

Where: $i,j = 1....N$ is the cross sectional unit and $t = 1....T$ identifies the time series and $\varepsilon_{i,j,t}$ is the error. $y_{i,j,t}$ is the dependent variable and $\gamma_{i,j,t}$ is a vector of explanatory variables. $c_{i,j}$ is a set of individual effects which may be unobserved in the model (such as country specific factors) which has a time invariant individual effect. FDI flows $_{i,j,t}$ stands for FDI outflows or inflows from country i to j at year t. The fixed effects model treats the unobserved heterogeneity ($c_{i,j}$) as a set of unknown parameters. The Hausman test is applied to determine which type of individual effects, fixed or random are most suitable for the model.

4.6.2 Hausman test

The Hausman test (Hausman, 1978) is based on the differences of the random and fixed effects model estimates. The test is performed on a random effects estimate of the model without any error correction. Since the fixed effects model is consistent when the unobserved term ($c_{i,j}$) and $\gamma_{i,j,t}$ are correlated, but the RE is inconsistent, a statistically significant difference is interpreted as evidence against the random effects assumption. (Wooldridge, 2002).

The Hausman test statistic can be written as:

$$H_T = T(\hat{u}_T - \tilde{u}_T)(\tilde{V}_T - \hat{V}_T)(\tilde{u}_T - \hat{u}_T),$$
(4.9)

Where $\tilde{V}_T$ and $\hat{V}_T$ are consistent estimators of the asymptotic covariance of $\hat{u}_T$ and $\tilde{u}_T$, respectively. It tests the null that the estimation is based on the correct model. The alternative is that the model is not correctly identified and a fixed effects model should therefore be used.

The result of the Hausman test for the empirical analysis in this chapter can be seen in table 4.1. It rejects the null hypothesis and the alternative is accepted: fixed effects should be used. This test is repeated again in the empirical analysis in chapter 6 and the econometric specification from this section is relevant for that analysis as well.

Table 4.1. Hausman Test for the econometric panel analysis in chapter 4;

Ho: there is no misspecification in the RE model

H1: there is misspecification in the RE model, use FE

Correlated Random Effects - Hausman Test
Equation: OLSHAUSMANTEST

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	492.222243	5	0.0000

Reject H$_0$

4.6.3 Panel estimation technique

The econometric estimation is carried out using the ordinary least squares method (OLS). The classical linear regression model is based on some assumptions that must be fulfilled so that the estimator is a best linear unbiased estimator (BLUE). These assumptions (Greene, 2008, p.44) are:

A1. *Linearity*: $y_{i,j,t} = \beta_0 + \gamma_{i,j,t}\beta_1 + \gamma_{i,j,t}\beta_2 + + ... + \gamma_{i,j,K}\beta_K + \varepsilon_{i,j,t}$

A2: *Full rank*: in the n x K sample data matrix, the γ has a full column rank.

A3: *Exogeniety of the independent variables* i.e. no correlation between the disturbances and the independent variables. This can be checked by calculating the correlation of the residuals of the OLS regression with the independent variables.

A4: *Homoskedasticity and non-autocorrelation*: each disturbance has the same variance and is uncorrelated with every other disturbance term. When dealing with panel data that is very

large and across many countries it can be assumed that I must account for cross sectional heteroskedasticity (Baltagi, 2008).

A5: *Stochastic relationship*;

A6: *Normality distribution*: the disturbances (errors) are normally distributed. The Jarque Bara test statistic is 6.37, which is a very mild violation of the normality of errors assumption.

The ordinary least squares estimator works in such a way that it minimizes the sum of squared residuals i.e. it fits a regression line in the place where the sums of squares of the errors are minimal. Having the aforementioned conditions in mind, a simple (OLS) estimation equation can be represented with:

$$\hat{y} = \hat{\beta}_0 + \hat{\beta}_1(\gamma_1) + \hat{\beta}_2(\gamma_2) + \hat{\beta}_3(\gamma_3) + u_{i,j,t} \tag{4.10}$$

Where y is the dependent variable (FDI flows) and γ_i stands for the independent variable groups (γ_1-macroeconomic variables; γ_2-geographical proximity variables; γ_3-institutional proximity and γ_4 cultural proximity group) while the β denotes the coefficient estimates. From that linear regression model any one of estimators (Wooldridge, 2002) for the three groups of variables will be estimated as follows (in the case of β_1):

$$\hat{\beta}_1 = \beta_1 + (\frac{1}{\sigma_\gamma^2}) \sum_{i=1}^{n} d_i u_i \tag{4.11}$$

Where $d_i = \gamma_i - \bar{\gamma}$, σ_γ^2 is the total variation in γ_i. The estimator $\hat{\beta}_1$ equals the population slope β_1 plus a term that is a linear function of the errors $u_i = \{u_1, u_2...... u_n\}$. A full derivation of the OLS method can be found in Wooldridge (2002, chapter 2).

I estimate an OLS regression on the models 4.5a/b and 4.6a/b in order to examine the explanatory power of the regressors on the dependant variable which is FDI outflows or

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inflows in 4.5a and 4.6a and 4.5b and 4.6b respectively. The standard errors are clustered in the cross- section of the panel using the (White, 1980) method in order to control for the heteroskedasticity that comes from the country variability (Wooldridge, 2002).

4.6.4 Generalised Method of Moments (GMM)

For robustness of the estimation results [results are reported in table 4.9], I conduct the same set of estimations using a static GMM IV estimation method. For instruments I use the lagged (one period) values.

The GMM model works in such a way that it minimises the quadratic form of the sample means (Q_t) and so the coefficient estimates ($\hat{\gamma}_T$) are estimated:

$$\hat{\gamma}_T = \text{argmin}_\gamma \ Q_T(u)$$

The GMM makes use of the orthogonality conditions (the presence of enough instruments to make the estimation) to allow for efficient estimation of the coefficients. I address the research questions with the regression models specified earlier in the equations 4.5a/b by estimating GMM static panel regressions fixed effects. It is done so by using a lagged value of the independent variables as instruments (except for the dummy variables and the physical distance variable).

The use of GMM addresses some endogeniety issues

4.7. Results

In this section I discuss the presence of near-home bias in FDI flows. I analyse the effects of four groups of variables on FDI flows: cultural, institutional and physical proximity and macroeconomic factors. The results are presented in tables 4.1 through 4.8.

Table 4.2. Near-home bias in FDI outflows

Dependant variable is log (FDI outflows $_{i,j,t}$) which equals foreign direct investment flow from country i to country j at time t; The FDI outflows are from the FDI sending country towards the FDI receiving country. The explanatory variables are: Log of the GDP of the FDI receiving country; log of the GDP for the FDI sending country; trade openness (ratio of exports plus imports over GDP) for the FDI receiving country; trade openness (ratio of exports plus imports over GDP) for the FDI sending country; the log of the physical distance between the country i and j in kilometres; shared continent dummy (value of one if the two country i and j are one the same continent); shared border dummy (value of one if country i and j share a border); shared economic or political organisation dummy (value of one if country i and j share membership in the same economic or political organisation); same legal origin dummy (one if country i and j share the same origin of their legal systems); shared language (one if country i and j share the same official language or language of the minorities); shared history (one if country i and j share history with respect to having had a past colonial relationship or having been part of the same country). The t-statistics are based on standard errors that have been adjusted for heteroskedasticity using the White (1980) method; Fixed effects used; Note that *, **, *** stand for significant coefficients at the 10%, 5% and 1% level respectively;

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	(Log)FDI Outflows	(Log)FDI Outflows	(Log)FDI Outflows	(Log)FDI Outflows	(Log)FDI Outflows	(Log)FDI Outflows	(Log)FDI Outflows	(Log)FDI Outflows	(Log)FDI Outflows
C	-4.95***	-8.04***	-8.10***	-8.56***	-8.31***	-8.60***	-9.07***	-8.78***	-9.15***
(Log) GDPrec	0.69***	0.82***	0.82***	0.81***	0.75***	0.76***	0.78***	0.77***	0.75***
(Log) GDP send	0.92***	1.18***	1.18***	1.18***	1.17***	1.18***	1.19***	1.17***	1.31***
Openness rec		0.36***	0.36***	0.36***	0.35***	0.37***	0.37***	0.36***	0.36***
Openness send		0.66***	0.66***	0.67***	0.67***	0.67***	0.71***	0.70***	0.89***
(Log) Distance	-0.65***	-0.60***	-0.58***	-0.44***	-0.42	-0.41***	-0.33***	-0.37***	-0.46***
Same Continent			0.02	0.07**	0.00***	0.05	0.14***	0.12***	0.10***
Border				0.34***	0.34***	0.24***	0.20***	0.13***	0.04
Shared Econ. Org.					0.21***	0.20***	0.20***	0.20***	0.16***
Same Legal System						0.28***	0.19***	0.14***	0.12***
Shared History							0.51***	0.38***	0.36***
Shared Language								0.29***	0.30***
Cul. Dist. Ind.									-0.05***
N	14,669	13,878	13,878	13,878	13,878	13,878	13,878	13,878	11,304
Adj. R²	0.44	0.48	0.48	0.49	0.49	0.50	0.51	0.52	0.50

The accent of the results analysis is primarily put on the outflows of foreign direct investment of OECD countries towards the rest of the world. This perspective best enables us to see the influence of the near-home bias variables on FDI because they show us where countries choose to make their investments out of the whole world. The data also consist of FDI inflows of approximately the same size in terms of a number of observations. By performing the same estimations on FDI inflows we can immediately see a comparison of all of the results and identify any potential differences there might exist. Furthermore, I consider a set of additional variables in order to control for the possibility of asymmetric information and the costliness of doing business abroad. Finally, in order to see if the results are robust according to the econometric method, I instrument the independent variables (using their lags) and use a static GMM (instrumental variable) regression. Each of the regressions are estimated for the FDI outflows panel and then for the inflows panel data as well.

4.7.1. Near-home bias in FDI outflows

Table 4.2 reports the results for the panel data regressions. In the case of FDI outflows the FDI sending country is an OECD member and the FDI receiving country is a partner country anywhere in the world.

The regressions are run starting with the basic gravity model and followed by adding the variables one by subsequently.

Column (1) reports the results for the basic economic relation between FDI outflows and economic mass and distance, as established by the gravity model. The coefficient estimate for the GDP of the FDI sending country is positive indicating that as income increases in the FDI sending country FDI outflow increases. The coefficient estimate for the GDP of the FDI receiving country is also positive. As income in the FDI receiving country increases, FDI

flows to that country increases. The coefficient estimate for distance is negative. FDI outflows are lower to countries that are geographically further away. As the gravity model predicts (Andersen and Wincoop, 2003) the economic activity in both the FDI sending and the FDI receiving country is important in determining the FDI outflows. The size of the economies of the FDI partner countries gravitates FDI investments among larger economies that are geographically closer.

In column (2) the country openness to trade is added as an additional explanatory variable. The coefficient estimates for the trade openness of both the FDI sending and the receiving countries are positive. As expected countries that are more open to trade have higher FDI flows. FDI flows constitute a mechanism for international integration (Edison et al., 2002). Corporations have to weigh the costs and risks of investing at home against opportunities at home and against opportunities competitor countries offer. If a country is more open to trade, penetration to a foreign market is easier and FDI partnership is uncomplicated to maintain. Both host and source country characteristics in terms of openness to trade are important for corporate managers to penetrate into a foreign market.

Columns (3) and (4) include the two proxies for the physical proximity between the FDI host and source countries. In column (3) I add the dummy variable measuring if the partner countries are in the same continent. The coefficient estimate for the same continent dummy is not significant, although it becomes significant in the final regression in column (9). In column (4) I use the dummy variable that measures if the FDI sending and receiving countries share a border. The coefficient estimate for the shared border dummy is positive. FDI outflows are higher to countries that share a border. Corporate managers prefer to invest into countries that are bordering their own country as they usually are more familiar with the investment climate of such neighbouring countries. Firms expand abroad to exploit the knowledge created within the firm, including not only technical knowhow but also marketing

and managerial know how (Casson, 1987). This know how advantage, is most powerful in an environment that is most equal to the environment that they are already familiar with (Buckley and Casson, 1991). Neighbouring countries usually constitute a climate similar to one's home country.

Next, I measure the effect of shared economic and legal systems and cultural similarities on FDI flows. Columns (5) through to (9) incorporate one by one the five near-home bias variables that are the main focus of this study. Column (5) reports results with the dummy variable that measures if the FDI partner countries are in the same economic organisation. The coefficient estimate for shared economic organisation dummy is positive. When a firm decides to invest abroad, it does not only depend on its internal competitive advantages but also its advantages over domestic firms and other foreign firms. The economic structure and institutional quality in FDI sending and receiving countries is a major competitive advantage when investments are channelled towards countries in the same economic organisation. Similarity of the economic structures of the host and source countries creates a familiar environment where firms prefer to invest.

Column (6) introduces a dummy variable that measures if the FDI sending and receiving countries have the same origin of legal system. The coefficient estimate for the same legal system dummy is positive indicating that FDI flows are higher towards countries that have a similar legal system. Similarity of institutional environments is important in FDI decisions. If a company is used to work in a certain legal framework, whether British, German or French, it might be better able to exploit its knowledge advantage in a country that operates under the same legal system. Other things being equal it would be more advantageous to penetrate into a foreign market whose legal system is familiar. The empirical work of Galindo et al. (2003) shows that in the banking sector, foreign bank penetration is greater between countries that have legal and institutional similarities.

Column (7) introduces a dummy variable that measures if the host and source countries have a shared official language or a shared language spoken by a minority in either country. The coefficient estimate for the shared language dummy is positive. Corporate investors prefer to invest in countries that have a shared language. Language is a major ingredient of cultural climate. Speaking the same language gives a competitive advantage to firms expanding abroad against their foreign competitors that do not speak the same language. It puts them into a level field with domestic firms that speak the same language.

A dummy for common history is added in column (8); it takes the value of 1, if the FDI sending and receiving countries share a common history. The coefficient estimate for the shared history dummy is positive. Firms invest more in countries with which they share a past such as having been part of the same country in the past or having had colonial ties. "Shared history" is used in daily language to indicate having a lot in common. A shared history implicitly provides familiarity with business climates, a common understanding of issues and ways of resolving them. Historical similarities encourage the firms' expansion across borders.

Ultimatly, in column (9) I control for the cultural similarities between the two countries in the country pair as defined by Hofstede (1980) and converted in an index by Kogut and Singh (1988). Hofstede claims that culture is more often than not a source of conflict rather than synergy. We can see that the index has the expected negative sign indicating that the greater the cultural distance between the country pairs, the less FDI outflows between them.

FDI decisions are difficult to reverse compared to portfolio investments in foreign destinations. The location decisions of foreign direct investors provide a good test of how familiarity breeds investments. The findings suggest that foreign direct investors prefer to invest near home; in countries that share a border with their home country, in countries that are in the same economic organisation with their home country, and that use the same legal

frameworks. Historical ties such as sharing the same home country some time in near history and linguistic ties such as being able to speak home language in a foreign country are also driving forces in foreign direct investors' location decisions. The cultural distance is important in that it shows that the greater the cultural distance between two countries the lesser the FDI relationship and interaction between them, acting similarly to physical distance. In general, I can conclude that near-home bias is a significant contributing factor in FDI outflows. I find that investments flow more towards places that are more similar to the FDI sending country with respect to certain 'non-economic' factors that show social, cultural, historical and political preference.

4.7.2. Near-home bias in FDI inflows

Table 4.3. shows the results for the near-home bias analysis in the case of FDI inflows. Estimating the general model from equation 4.5 in the case of FDI inflows will give an overall comparison of the results from the outflows analysis and identify any discrepacies and deviations. I expect similar if not the same findings as is FDI outflows. The dataset in this thesis shows two perspectives, FDI outflows which occur from OECD member countries towards the rest of the world and FDI inflows which are directed from all of the countries in the world towards the 30 OECD member countries. The *a priori* expectation is that the variables in the model will have the same effect in both cases, however it is highly important to see if there are some differences, what they are.

Similar to the previous table (4.2), the same 9 columns of regressions are estimated, by adding the independent variables one by one, starting from the basic gravity model.

Table 4.3. Near-home bias in FDI inflows

Dependant variable is log (FDI inflows $_{i,j,t}$) which equals foreign direct investment inflow to country i from country j at time t; The FDI inflows are from the FDI sending country towards the FDI receiving country. The explanatory variables are: Log of the GDP of the FDI receiving country; log of the GDP for the FDI sending country; trade openness (ratio of exports plus imports over GDP) for the FDI receiving country; trade openness (ratio of exports plus imports over GDP) for the FDI sending country; the log of the physical distance between the country i and j in kilometres; shared continent dummy (value of one if the two country i and j are one the same continent); shared border dummy (value of one if country i and j share a border); shared economic or political organisation dummy (value of one if country i and j share membership in the same economic or political organisation); same legal origin dummy (one if country i and j share the same origin of their legal systems); shared language (one if country i and j share the same official language or language of the minorities); shared history (one if country i and j share history with respect to having had a past colonial relationship or having been part of the same country). The t-statistics are based on standard errors that have been adjusted for heteroskedasticity using the White (1980) method; Fixed effects used; Note that *, **, *** stand for significant coefficients at the 10%, 5% and 1% level respectively;

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	(Log)FDI Inflows	(Log)FDI Inflows	(Log)FDI Inflows	(Log)FDI Inflows	(Log)FDI Inflows	(Log)FDI Inflows	(Log)FDI Inflows	(Log)FDI Inflows	(Log)FDI Inflows
C	-4.22***	-7.11***	-6.67***	-6.95***	-6.30***	-6.68***	-7.08***	-6.63***	-6.78***
(Log) GDPrec	0.69***	0.88***	0.87***	0.86***	0.84***	0.85***	0.85***	0.82***	0.80***
(Log) GDP send	0.91***	1.10***	1.10***	1.10***	0.91***	0.94***	0.95***	0.95***	1.04***
Openness rec		0.42***	0.41***	0.41***	0.41***	0.42***	0.44***	0.42***	0.38***
Openness send		0.51***	0.51***	0.52***	0.48***	0.50***	0.52***	0.51***	0.54***
(Log) Distance	-0.91***	-0.87***	-0.95***	-0.88***	-0.82***	-0.80***	-0.73***	-0.81***	-0.84***
Same Continent			-0.10**	-0.07*	-0.25***	-0.22***	-0.13***	-0.18***	-0.17***
Border				0.21***	0.22***	0.11***	0.08***	-0.02	-0.05*
Shared Econ. Org.					0.63***	0.64***	0.64***	0.65***	0.61***
Same Legal System						0.28***	0.21***	0.14***	0.16***
Shared History							0.41***	0.22***	0.19***
Shared Language								0.41***	0.42***
Cul. Dist. Ind.									0.004**
N	11,900	11,263	11,263	11,263	11,263	11,263	11,263	11,263	9,758
Adj. R^2	0.46	0.50	0.50	0.51	0.54	0.55	0.55	0.56	0.52

In the first column (1) we can see that all of the coefficients are significant indicating that greater GDP for both the receiving and sending countries are generating more FDI inflows to the economy. In the second column (2) I add the proxy for trade openness – the sum of exports and imports divided by the country's GDP and it can be concluded that in this case as for FDI outflows, the greater the openness to trade, the higher the FDI inflows. In the columns (3) and (4) I add the two other physical proximity variables: the shared continent and shared border. The shared continent dummy variable shows a negative sign to the contrary of the expected but this could be due to the high correlation between the shared continent and the physical distance as discussed previously in the data section. Given that the shared continent variable generally has a positive sign in the FDI outflows analysis, another reason for this sign could be the sample: FDI inflows recipients in this case are OECD member countries most of which are located in Europe. In the columns (5) through (9) I add one by one the variables that denote institutional and cultural proximity between nations. They are all statistically significant and have the expected signs which are positive except in the case of the cultural distance index which is expected to be negative.

The shared economic or political organisation dummy is positive and significant demonstrating that FDI outflows tend towards institutionally similar countries. The shared legal origin dummy is also positive and significant; countries prefer to make FDI investments to countries that have similar institutional organisation. The countries with a shared language are a preferred location for investors due to an easier way to do business. This has a stimulating influence for FDI inflows. The same history between the countries in the bilateral country pair has a positive influence on FDI in general. The smaller the cultural distance between the country pair countries the greater the FDI inflows between them.

This section presents the results for near-home bias in FDI flows. The results present the analysis of six additional variables: bilateral trust, international phone calls per capita, Financial Times circulation per capita, bilateral tax treaties for double taxation avoidance and six different country governance indicators. These variables are relevant in showing how asymmetric information and the costliness of doing business impact the FDI flows. These additional variables aren't bilateral (except the bilateral tax treaty), they refer to the FDI receiving country. They also greatly reduce the amount of observations compared to the previous regressions.

Bilateral trust

This section looks into the influence of bilateral trust in near-home bias in FDI flows. This variable is taken from Guiso et al. (2009) and because its limited scope, consisting of 15 European countries two of the other variables are lost: shared continent and economic and political organisation dummies. The bilateral trust is measured through a survey in which the respondents answer to which degree they trust managers from their own and other countries. We can see that the bilateral trust index is both positive and significant in both cases of outflows and inflows. This confirms the findings in Guiso et al. (2009) in that bilateral trust plays a big role in the cultural biases between countries and their subsequent economic relationship. This reduction in the sample also influences the shared history and border variables. The shared border becomes insignificant suggesting that these European countries have a large FDI relationship despite not being immediate neighbours but this is to be expected in a sample containing the 15 most developed EU countries. The other variables follow the expectations and findings of the main regression in tables 4.2 and 4.3. The bilateral

Table 4.4a. Bilateral Trust and Near-home bias in FDI outflows;

Dependant variable is log (FDI outflows $_{i,j,t}$) which equals foreign direct investment flow from country i to country j at time t; The FDI outflows are from the FDI sending country towards the FDI receiving country. The explanatory variables are: Log of the GDP of the FDI receiving country; log of the GDP for the FDI sending country; trade openness (ratio of exports plus imports over GDP) for the FDI receiving country; trade openness (ratio of exports plus imports over GDP) for the FDI sending country; the log of the physical distance between the country i and j in kilometres; shared continent dummy (value of one if the two country i and j are one the same continent); shared border dummy (value of one if country i and j share a border); shared economic or political organisation dummy (value of one if country i and j share membership in the same economic or political organisation); same legal origin dummy (one if country i and j share the same origin of their legal systems); shared language (one if country i and j share the same official language or language of the minorities); shared history (one if country i and j share history with respect to having had a past colonial relationship or having been part of the same country); cultural distance index (based on Kogut and Singh (1988)); bilateral trust between the citizens of two countries (from Guiso et al., 2009)The t-statistics are based on standard errors that have been adjusted for cross-sectional heteroskedasticity using the White (1980) method; Fixed effects used; Note that *, **, *** stand for significant coefficients at the 10%, 5% and 1% level respectively;

	(1)	*(2)*
	(Log)FDI Outflows	**(Log)FDI Outflows**
C	-9.15***	-11.67***
(Log) GDPrec	0.75***	1.01***
(Log) GDP send	1.31***	1.27***
Openness rec	0.36***	0.69***
Openness send	0.89***	0.87***
(Log) Distance	-0.46***	-0.59***
Same Continent	0.10***	NA
Border	0.04	0.02
Shared Econ. Org.	0.16***	NA
Same Legal System	0.12***	0.23***
Shared History	0.36***	0.82***
Shared Language	0.30***	-0.48***
Cul. Dist. Index	-0.05***	-0.07***
Bilateral Trust		0.66***
N	**11,304**	**2,773**
Adj. R^2	**0.50**	**0.64**

Table 4.4b. Bilateral Trust and Near-home bias in FDI inflows;

Dependant variable is log (FDI inflows $_{i,j,t}$) which equals foreign direct investment inflow to country i from country j at time t; The FDI inflows are from the FDI sending country towards the FDI receiving country. The explanatory variables are: Log of the GDP of the FDI receiving country; log of the GDP for the FDI sending country; trade openness (ratio of exports plus imports over GDP) for the FDI receiving country; trade openness (ratio of exports plus imports over GDP) for the FDI sending country; the log of the physical distance between the country i and j in kilometres; shared continent dummy (value of one if the two country i and j are one the same continent); shared border dummy (value of one if country i and j share a border); shared economic or political organisation dummy (value of one if country i and j share membership in the same economic or political organisation); same legal origin dummy (one if country i and j share the same origin of their legal systems); shared language (one if country i and j share the same official language or language of the minorities); shared history (one if country i and j share history with respect to having had a past colonial relationship or having been part of the same country); cultural distance index (based on Kogut and Singh (1988)); bilateral trust between the citizens of two countries (from Guiso et al., 2009)The t-statistics are based on standard errors that have been adjusted for cross-sectional heteroskedasticity using the White (1980) method; Fixed effects used; Note that *, **, *** stand for significant coefficients at the 10%, 5% and 1% level respectively;

	(1)	*(2)*
	(Log)FDI Inflows	**(Log)FDI Inflows**
C	-6.78***	-6.12***
(Log) GDPrec	0.80***	0.74***
(Log) GDP send	1.04***	1.00***
Openness rec	0.38***	-0.04
Openness send	0.54***	0.53***
(Log) Distance	-0.84***	-1.07***
Same Continent	-0.17***	NA
Border	-0.05*	-0.08*
Shared Econ. Org.	0.61***	NA
Same Legal System	0.16***	0.13***
Shared History	0.19***	0.36***
Shared Language	0.42***	-0.14
Cul. Dist. Index	0.004**	0.00
Bilateral Trust		0.45***
N	**9,758**	**2,635**
Adj. R^2	**0.52**	**0.60**

Table 4.5a. Asymmetric Information and Near-home bias in FDI outflows;

Dependant variable is log (FDI outflows $_{i,j,t}$) which equals foreign direct investment flow from country i to country j at time t; The FDI outflows are from the FDI sending country towards the FDI receiving country. The explanatory variables are: Log of the GDP of the FDI receiving country; log of the GDP for the FDI sending country; trade openness (ratio of exports plus imports over GDP) for the FDI receiving country; trade openness (ratio of exports plus imports over GDP) for the FDI sending country; the log of the physical distance between the country i and j in kilometres; shared continent dummy (value of one if the two country i and j are one the same continent); shared border dummy (value of one if country i and j share a border); shared economic or political organisation dummy (value of one if country i and j share membership in the same economic or political organisation); same legal origin dummy (one if country i and j share the same origin of their legal systems); shared language (one if country i and j share the same official language or language of the minorities); shared history (one if country i and j share history with respect to having had a past colonial relationship or having been part of the same country); cultural distance index (based on Kogut and Singh (1988)); international telephone calls in minutes per capita for the FDI receiving country; financial times circulation per capita for the FDI outflows receiving country. The t-statistics are based on standard errors that have been adjusted for heteroskedasticity using the White (1980) method; Fixed effects used; Note that *, **, *** stand for significant coefficients at the 10%, 5% and 1% level respectively;

	(1)	(2)	(3)
	(Log)FDI Outflows	(Log)FDI Outflows	(Log)FDI Outflows
C	-9.15***	-9.10***	-9.87***
(Log) GDPrec	0.75***	0.75***	0.81***
(Log) GDP send	1.31***	1.34***	1.47***
Openness rec	0.36***	0.27***	0.36***
Openness send	0.89***	0.90***	0.88***
(Log) Distance	-0.46***	-0.51***	-0.58***
Same Continent	0.10***	0.12***	0.09*
Border	0.04	0.04	0.02
Shared Econ. Org.	0.16***	0.09*	0.05
Same Legal System	0.12***	0.13***	0.18***
Shared History	0.36***	0.38***	0.40***
Shared Language	0.30***	0.28***	0.26***
Cul. Dist. Index	-0.05***	-0.03***	-0.05***
L(Int. Phone Calls/capita)		0.02**	
L(FT/capita)			0.00
N	11,304	8,748	2,792
Adj. R^2	0.50	0.49	0.52

Table 4.5b. Asymmetric Information and Near-home bias in FDI inflows;

Dependant variable is log (FDI inflows $_{i,j,t}$) which equals foreign direct investment inflow to country i from country j at time t; The FDI inflows are from the FDI sending country towards the FDI receiving country. The explanatory variables are: Log of the GDP of the FDI receiving country; log of the GDP for the FDI sending country; trade openness (ratio of exports plus imports over GDP) for the FDI receiving country; trade openness (ratio of exports plus imports over GDP) for the FDI sending country; the log of the physical distance between the country i and j in kilometres; shared continent dummy (value of one if the two country i and j are one the same continent); shared border dummy (value of one if country i and j share a border); shared economic or political organisation dummy (value of one if country i and j share membership in the same economic or political organisation); same legal origin dummy (one if country i and j share the same origin of their legal systems); shared language (one if country i and j share the same official language or language of the minorities); shared history (one if country i and j share history with respect to having had a past colonial relationship or having been part of the same country); cultural distance index (based on Kogut and Singh (1988)); international telephone calls in minutes per capita for the FDI receiving country; financial times circulation per capita for the FDI outflows receiving country. The t-statistics are based on standard errors that have been adjusted for heteroskedasticity using the White (1980) method; Fixed effects used; Note that *, **, *** stand for significant coefficients at the 10%, 5% and 1% level respectively;

	(1)	*(2)*	*(3)*
	(Log)FDI inflows	**(Log)FDI inflows**	**(Log)FDI inflows**
C	-6.78***	-5.85***	-6.11***
(Log) GDPrec	0.80***	0.67***	0.78***
(Log) GDP send	1.04***	1.01***	1.06***
Openness rec	0.38***	0.07	0.38***
Openness send	0.54***	0.52***	0.54***
(Log) Distance	-0.84***	-0.88***	-0.86***
Same Continent	-0.17***	-0.14***	-0.16**
Border	-0.05*	-0.06	-0.07
Shared Econ. Org.	0.61***	0.69***	0.75***
Same Legal System	0.16***	0.18***	0.20***
Shared History	0.19***	0.21***	0.08**
Shared Language	0.42***	0.35***	0.41***
Cul. Dist. Index	0.004**	0.003*	-0.01**
Int. Phone Calls/capita		0.003***	
L(FT/capita)			0.08***
N	**9,758**	**7,481**	**2,698**
Adj. R²	**0.52**	**0.55**	**0.56**

trust between managers of different nations does have a very strong effect on FDI flows but doesn't replace the influence of home country bias.

Asymmetric information

This section discusses the influence of asymmetric information in near-home bias in FDI flows. The results can be found in tables 4.5a and 4.5b. In order to consider information availability as a possible explanation for near-home bias I add two proxy variables: international phone minutes per capita and Financial Times circulation per capita for the FDI outflows receiving country.

In the case of FDI outflows, only the international phone calls variable is significant and positive while the FT per capita circulation isn't. In the case of FDI inflows both of these variables that represent asymmetric information are positive and significant. This means that the greater the information availability in one country, the higher the investment attractiveness of that country. This is consistent with previous findings in both home bias in equity markets and FDI literature. This however isn't the only explanation for home bias, also consistent with previous findings. Though a factor, asymmetric information isn't the only thing that can explain near-home bias as shown by the significant near-home bias variables in n tables 4.2 and 4.3.

Bilateral tax treaties

Bilateral tax treaties are a possible factor in near-home bias in FDI flows. The regressions in 4.6a and 4.5b consider the influence of bilateral tax treaties for double taxation avoidance. In the case of FDI inflows this variable isn't significant. In the case of FDI outflows this variable is a strong determinant of FDI flows but similarly to the case of the two asymmetric information variables in table 4.6a, the near-home bias variables remain

Table 4.6a. Bilateral Tax Treaties and Near-home bias in FDI outflows;

Dependant variable is log (FDI outflows $_{i,j,t}$) which equals foreign direct investment flow from country i to country j at time t; The FDI outflows are from the FDI sending country towards the FDI receiving country. The explanatory variables are: Log of the GDP of the FDI receiving country; log of the GDP for the FDI sending country; trade openness (ratio of exports plus imports over GDP) for the FDI receiving country; trade openness (ratio of exports plus imports over GDP) for the FDI sending country; the log of the physical distance between the country i and j in kilometres; shared continent dummy (value of one if the two country i and j are one the same continent); shared border dummy (value of one if country i and j share a border); shared economic or political organisation dummy (value of one if country i and j share membership in the same economic or political organisation); same legal origin dummy (one if country i and j share the same origin of their legal systems); shared language (one if country i and j share the same official language or language of the minorities); shared history (one if country i and j share history with respect to having had a past colonial relationship or having been part of the same country); cultural distance index (based on Kogut and Singh (1988)); bilateral tax treaties for double taxation avoidance. The t-statistics are based on standard errors that have been adjusted for cross-sectional heteroskedasticity using the White (1980) method; Fixed effects used; Note that *, **, *** stand for significant coefficients at the 10%, 5% and 1% level respectively;

	(1)	*(2)*
	(Log)FDI Outflows	(Log)FDI Outflows
C	-9.15***	-9.40***
(Log) GDPrec	0.75***	0.77***
(Log) GDP send	1.31***	1.27***
Openness rec	0.36***	0.39***
Openness send	0.89***	0.86***
(Log) Distance	-0.46***	-0.38***
Same Continent	0.10***	0.15***
Border	0.04	0.03
Shared Econ. Org.	0.16***	0.12***
Same Legal System	0.12***	0.15***
Shared History	0.36***	0.37***
Shared Language	0.30***	0.32***
Cul. Dist. Index	-0.05***	-0.05***
Bilat. tax treaties		0.17***
N	**11,304**	**10,727**
Adj. R^2	**0.50**	**0.51**

Table 4.6b. Bilateral Tax Treaties and Near-home bias in FDI inflows;

Dependant variable is log (FDI inflows $_{i,j,t}$) which equals foreign direct investment inflow to country i from country j at time t; The FDI inflows are from the FDI sending country towards the FDI receiving country. The explanatory variables are: Log of the GDP of the FDI receiving country; log of the GDP for the FDI sending country; trade openness (ratio of exports plus imports over GDP) for the FDI receiving country; trade openness (ratio of exports plus imports over GDP) for the FDI sending country; the log of the physical distance between the country i and j in kilometres; shared continent dummy (value of one if the two country i and j are one the same continent); shared border dummy (value of one if country i and j share a border); shared economic or political organisation dummy (value of one if country i and j share membership in the same economic or political organisation); same legal origin dummy (one if country i and j share the same origin of their legal systems); shared language (one if country i and j share the same official language or language of the minorities); shared history (one if country i and j share history with respect to having had a past colonial relationship or having been part of the same country); cultural distance index (based on Kogut and Singh (1988)); bilateral tax treaties for double taxation avoidance. The t-statistics are based on standard errors that have been adjusted for cross-sectional heteroskedasticity using the White (1980) method; Fixed effects used; Note that *, **, *** stand for significant coefficients at the 10%, 5% and 1% level respectively;

	(1)	*(2)*
	(Log)FDI inflows	(Log)FDI inflows
C	-6.78***	-6.87***
(Log) GDPrec	0.80***	0.81***
(Log) GDP send	1.04***	0.99***
Openness rec	0.38***	0.54***
Openness send	0.54***	0.55***
(Log) Distance	-0.84***	-0.78***
Same Continent	-0.17***	-0.17***
Border	-0.05*	-0.13***
Shared Econ. Org.	0.61***	0.76***
Same Legal System	0.16***	0.11***
Shared History	0.19***	0.11***
Shared Language	0.42***	0.53***
Cul. Dist. Index	0.004**	-0.02***
Bilat. tax treaties		-0.03
N	9,758	5,874
Adj. R²	0.52	0.55

significant, suggesting that even though tax treaties play a role in the choice of FDI destination countries, it is not the sole explanatory factor along with the other macroeconomic variables in predicting the choice country for FDI. The results of the influence of this variable should be taken with caution considering the fact that more than 75% of the countries have a signed bilateral tax treaty.

Country Governance

This section discusses the influence of country governance indicators and near-home bias in FDI flows. Results show that all of the six governance indicators are significant and positive in both the cases of FDI outflows (table 4.7a) and inflows (table 4.7b). This suggests that the individual country governance in the FDI outflows and inflows receiving country plays a significant role in the choice country. FDI investors prefer to invest in countries where there is better governance. The voice and accountability indicator is positive and significant indicating that the greater the freedom of speech and expression of the citizens of one country, the greater the FDI flows to that country. The political stability indicator shows a positive and significant influence on FDI flows. The greater the political stability and absence of violence the more the FDI flows. Same is true for greater government effectiveness, the better the quality of public services the more FDI flows. Regulatory quality shows the ability of the government to implement sound policies that promote the private sector, therefore the greater this quality the more FDI flows will be attracted. This variable is also positive and significant. The rule of law variable is positive and significant, the greater the rule of law i.e. the extent to which the rules of the society are abided, the greater the FDI flows to that country. Finally, the control of corruption is also both positive and significant indicating that the investors prefer countries with greater control over corruption.

Table 4.7a. Country Governance Factors and Near-home bias in FDI outflows;

Dependant variable is log (FDI outflows $_{i,j,t}$) which equals foreign direct investment flow from country i to country j at time t; The FDI outflows are from the FDI sending country towards the FDI receiving country. The explanatory variables are: Log of the GDP of the FDI receiving country; log of the GDP for the FDI sending country; trade openness (ratio of exports plus imports over GDP) for the FDI receiving country; trade openness (ratio of exports plus imports over GDP) for the FDI sending country; the log of the physical distance between the country i and j in kilometres; shared continent dummy (value of one if the two country i and j are one the same continent); shared border dummy (value of one if country i and j share a border); shared economic or political organisation dummy (value of one if country i and j share membership in the same economic or political organisation); same legal origin dummy (one if country i and j share the same origin of their legal systems); shared language (one if country i and j share the same official language or language of the minorities); shared history (one if country i and j share history with respect to having had a past colonial relationship or having been part of the same country); cultural distance index (based on Kogut and Singh (1988)); voice and accountability index; political stability and absence of violence index; government effectiveness; regulatory quality; rule of law; control of corruption. The t-statistics are based on standard errors that have been adjusted for cross-sectional heteroskedasticity using the White (1980) method; Fixed effects used; Note that *, **, *** stand for significant coefficients at the 10%, 5% and 1% level respectively;

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
	(Log)FDI Outflows	(Log)FDI Outflows	(Log)FDI Outflows	(Log)FDI Outflows	(Log)FDI Outflows	(Log)FDI Outflows
C	-9.52***	-9.26***	-9.29***	-9.21***	-9.34***	-9.33***
(Log) GDPrec	0.79***	0.77***	0.74***	0.75***	0.76***	0.75***
(Log) GDP send	1.49***	1.48***	1.48***	1.49***	1.48***	1.48***
Openness rec	0.30***	0.25***	0.26***	0.21***	0.28***	0.27***
Openness send	0.94***	0.94***	0.94***	0.94***	0.94***	0.94***
(Log) Distance	-0.69***	-0.70***	-0.67***	-0.70***	-0.68***	-0.67***
Same Continent	0.04	0.04	0.06*	0.04	0.06*	0.06*
Border	-0.04	-0.06	-0.03	-0.03	-0.04	-0.03
Shared Econ. Org.	-0.13***	-0.06	-0.05	-0.13**	0.00	-0.04
Same Legal System	0.14***	0.13***	0.14***	0.14***	0.13***	0.14***
Shared History	0.42***	0.42***	0.42***	0.42***	0.42***	0.43***
Shared Language	0.26***	0.30***	0.27***	0.26***	0.29***	0.27***
Cul. Dist. Index	-0.02***	-0.03***	-0.03***	-0.02***	-0.03***	-0.03***
Voice and Acc.	0.16***					
Polit. Stab.		0.12***				
Gov. Effect.			0.10***			
Regulat. Quality				0.20***		
Rule of Law					0.06***	
Control of Corr.						0.08***
N	4,496	4,496	4,496	4,496	4,496	4,496
Adj. R^2	0.52	0.51	0.50	0.50	0.50	0.50

Table 4.7b. Country Governance Factors and Near-home bias in FDI inflows;

Dependant variable is log (FDI inflows $_{i,j,t}$) which equals foreign direct investment inflow to country i from country j at time t; The FDI inflows are from the FDI sending country towards the FDI receiving country. The explanatory variables are: Log of the GDP of the FDI receiving country; log of the GDP for the FDI sending country; trade openness (ratio of exports plus imports over GDP) for the FDI receiving country; trade openness (ratio of exports plus imports over GDP) for the FDI sending country; the log of the physical distance between the country i and j in kilometres; shared continent dummy (value of one if the two country i and j are one the same continent); shared border dummy (value of one if country i and j share a border); shared economic or political organisation dummy (value of one if country i and j share membership in the same economic or political organisation); same legal origin dummy (one if country i and j share the same origin of their legal systems); shared language (one if country i and j share the same official language or language of the minorities); shared history (one if country i and j share history with respect to having had a past colonial relationship or having been part of the same country); cultural distance index (based on Kogut and Singh (1988)); voice and accountability index; political stability and absence of violence index; government effectiveness; regulatory quality; rule of law; control of corruption. The t-statistics are based on standard errors that have been adjusted for cross-sectional heteroskedasticity using the White (1980) method; Fixed effects used; Note that *, **, *** stand for significant coefficients at the 10%, 5% and 1% level respectively;

	(1) (Log)FDI Inflows	*(2)* (Log)FDI Inflows	*(3)* (Log)FDI Inflows	*(4)* (Log)FDI Inflows	*(5)* (Log)FDI Inflows	*(6)* (Log)FDI Inflows
C	-8.09***	-7.62***	-7.16***	-7.60***	-7.28***	-7.30***
(Log) GDPrec	0.87***	0.91***	0.76***	0.81***	0.79***	0.79***
(Log) GDP send	1.04***	1.04***	1.04***	1.04***	1.03***	1.04***
Openness rec	0.46***	0.46***	0.36***	0.32***	0.40***	0.41***
Openness send	0.53***	0.52***	0.53***	0.53***	0.52***	0.53***
(Log) Distance	-0.81***	-0.89***	-0.83***	-0.83***	-0.84***	-0.83***
Same Continent	-0.08	-0.13**	-0.09	-0.08	-0.10	-0.09
Border	-0.05	-0.09*	-0.05	-0.03	-0.05	-0.05
Shared Econ. Org.	0.74***	0.74***	0.73***	0.72***	0.73***	0.73***
Same Legal System	0.22***	0.22***	0.22***	0.22***	0.23***	0.22***
Shared History	0.09**	0.11**	0.09**	0.06	0.09**	0.08*
Shared Language	0.43***	0.44***	0.40***	0.39***	0.42***	0.41***
Cul. Dist. Index	-0.01***	-0.01**	-0.01***	-0.01***	-0.01**	-0.01***
Voice and Acc.	0.50***					
Polit. Stab.		0.30***				
Gov. Effect.			0.37***			
Regulat. Quality				0.56***		
Rule of Law					0.34***	
Control of Corr.						0.29***
N	4,099	4,099	4,099	4,099	4,099	4,099
Adj. R^2	0.58	0.57	0.58	0.59	0.58	0.58

The country governance quality in the FDI outflows and inflows receiving country plays a role in the potential costliness of investing in a particular country. Understandably, investors prefer to invest in countries that have better social governance. However this doesn't eliminate the other factors of near-home bias. All of them remain overwhelmingly significant for both FDI outflows and inflows and with their expected signs which shows that familiarity in the institutional and cultural sense still plays an important factor in the investment destination choices for FDI in addition to the macroeconomic and governance factors.

4.7.4. Robustness test - GMM (IV) estimation

In order to test the robustness of the econometric method as well as account for the possibility of endogeniety issues between the dependent variable and the residuals I estimate a GMM (Instrumental Variables (IV)) regression. There are quite a number of studies that use a different econometric method to OLS to estimate the determinants of FDI flows [Guiso et al (2009), Sembenelli, Siotis (2005), Ledyaeva, Linden 2006, Mitze et al. 2009), Foad (2007), Cazzavillan and Olszewski, 2009]. Using the general method of moments is beneficial in some cases when there is a panel dataset however it is most useful when there is a need for a dynamic panel analysis that uses a lag of the dependent variable as an explanatory variable. This is not the case here since adding such a lagged variable will impact the economic interpretation of the model as well as the research question. Of the other static panel data analysis using GMM, I perform regression estimations using the dependent variables in a lagged form as instruments. This is done in order to check the robustness of the econometric method.

Table 4.8. GMM (IV) estimation of Near-home bias in FDI flows;

Dependant variable is log (FDI in/outflows $_{i,j,t}$) which equals foreign direct investment flow to/from country i from country j at time t; The FDI flows are from the FDI sending country towards the FDI receiving country. The explanatory variables are: Log of the GDP of the FDI receiving country; log of the GDP for the FDI sending country; trade openness (ratio of exports plus imports over GDP) for the FDI receiving country; trade openness (ratio of exports plus imports over GDP) for the FDI sending country; the log of the physical distance between the country i and j in kilometres; shared continent dummy (value of one if the two country i and j are one the same continent); shared border dummy (value of one if country i and j share a border); shared economic or political organisation dummy (value of one if country i and j share membership in the same economic or political organisation); same legal origin dummy (one if country i and j share the same origin of their legal systems); shared language (one if country i and j share the same official language or language of the minorities); shared history (one if country i and j share history with respect to having had a past colonial relationship or having been part of the same country); cultural distance index (based on Kogut and Singh (1988. Estimation method used is a static Generalised Method of Moments (GMM) Instrumental Variables (IV). Lags of independent variables used as instruments. The t-statistics are based on standard errors that have been adjusted for cross-sectional heteroskedasticity using the White (1980) method; Fixed effects used; Note that *, **, *** stand for significant coefficients at the 10%, 5% and 1% level respectively;

GMM (IV)	(1)	(2)
	(Log)FDI inflows	(Log)FDI outflows
C	-6.70***	-5.38***
(Log) GDPrec	0.79***	0.74***
(Log) GDP send	1.04***	0.70***
Openness rec	0.37***	0.36***
Openness send	0.55***	2.29***
(Log) Distance	-0.85***	-0.47***
Same Continent	-0.17***	0.08***
Border	-0.05*	0.00
Shared Econ. Org.	0.63***	0.16***
Same Legal System	0.17***	0.12***
Shared History	0.18***	0.33***
Shared Language	0.40***	0.33***
Cul. Dist. Index	-0.01***	-0.04***
N	8,585	10,161
Adj. R^2	0.51	0.48

Table 4.8 shows the results of this regression for FDI outflows and inflows. The results show similar findings to the ones in the previous panel regressions. The R^2 coefficients are also very akin to the ones in the OLS.

Both of the regressions for FDI inflows and outflows in table 4.8 show identical statistical results except in the case of the shared continent dummy variable which also resemble the OLS regressions in tables 4.2(9) and 4.3(9). The shared continent coefficient is negative and significant for FDI inflows and positive and significant for FDI outflows. The rest of the variables have the predicted signs: the institutional and cultural proximity variables are positive and significant and have a stimulating effect on FDI flows while the cultural distance index has the expected negative sign. The macroeconomic variables are all positive and significant confirming the predicted stimulating effect on FDI flows. The physical proximity variable is as expected negative and significant indicating a decrease in FDI flows as the distance grows. By using the GMM (IV) method the findings from tables 4.2 and 4.3 are both confirmed and strengthened. Since the GMM (IV) results do not significantly differ from the OLS findings it is sufficient to use OLS as an estimation technique.

4.8. Conclusion

This chapter studies the location choices for foreign direct investments using data on the FDI outflows and inflows of the 30 OECD countries and their FDI partners for the period 1981-2005. I show that similarities between host and source countries are decisive factors in corporate decisions in entering a foreign market.

The results show that corporate investors prefer destinations that they are familiar with. Physical proximity is an indicator of familiarity because countries that are closer to each other tend to have similar features their cultures and business environments. Direct investors

also prefer to invest in countries with similar economic and legal systems to their own. Institutional similarities are important indicators for business climate familiarity. A commonly spoken language between the host and source countries and a shared history determine FDI decisions as they give a competitive advantage to the foreign investor relative to its international competitors. Corporations prefer destinations that they are familiar with in their international investments.

The results are important from a policy perspective. I show that economic activity and country openness are not necessarily the only prerequisites to attract foreign investors. FDIs tend to have a beneficial impact on economic growth and many countries want to attract them. I show that FDI investors prefer destinations that are familiar to them. There is need for caution here. Being neighbours or having a shared language may not be the only prerequisites to attract foreign direct investments. Developing the legal frameworks and enforcing them well may also make the business environment more familiar to foreign direct investors. As such these results suggest a further research agenda on country policy regarding FDI which will be addressed further on, in chapter 7.

Considering near-home bias at a global level immediately puts forward a question whether the same findings hold across different segments of the data: geographical destinations, different periods or different country income groups. A global perspective isn't enough to generalise findings across different segments. This issue is further examined in the next chapter (5), by dividing the dataset according to such criteria.

5. Segmented Analysis of Near-Home Bias in FDI Flows

5.1. Introduction

The purpose of this chapter is to uncover the differences of near-home bias in FDI flows in various sub-groups of data, stratified according to geography, time and country income levels. As previously discussed in the literature section, many studies in both equity markets and FDI are geographically or otherwise focused. They target many different country samples in order to discover any regional variation or other particularities in their sample. This chapter stratifies the full panel sample that was used in the previous chapter in several data segments according to three criteria: geography, time and country income. Seasholes and Zhu (2010) investigate local investment bias and point out to several potential pitfalls that go with studying individuals' investments and geography. One of these pitfalls has to do with the geographic and time-series selection bias of any data sample. To address such concerns it is prudent not only to have a cross-sectionally diverse dataset that covers a long time period but also to divide the sample and perform this analysis in various segments.

When it comes to the geographical aspects a natural stratification of the data are across regions and countries. Since these data are country level data, country level analysis is the lowest level that a geographical analysis on this dataset can go. The time dimension of the OECD dataset involves 25 years so the next natural stratification would be across time. Finally, a very informative and popular way to divide countries is according to their level of development. By taking this property of the countries we can take away the pre-imposed geographical consideration of any panel data that is made up of country data.

Overall, in both cases of FDI outflows and inflows there is supporting evidence for home country bias in FDI flows. Regardless whether it comes to a highly developed group of countries or a general consideration of the whole world, the influence of the near-home bias i.e. certain aspects of countries are present overall. Such a general and unrestrained sample

offers a broad picture in the general tendencies in FDI flows in the world. This however brings a need to the fore to narrow and restrict the dataset according to broad regions and at a country level to reaffirm these findings from a broad to a more specific level. The results have some differences with the main regressions but generally do not vary greatly.

Geographic stratification

As the title suggests, this division of the sample is done based on geographical criteria. The advantage of working with a cross-sectionally large dataset is that it can be easily stratified in sub-samples in order to discover the differences in near-home bias across regions and countries.

In a study on correlated investor trading, Feng and Seasholes (2004) find that the correlated trading occurs especially with respect to a particular region. It is important to discover the various idiosyncrasies of particular, geographically distinct locations, regions and countries. This will show any particular cross sectional properties of near-home bias that can't be observed with the full panel dataset in the previous chapter 4.

Time Stratification

In a study on the limits of financial globalization, Stulz (2005) argues that home bias in the international equity markets has diminished over time but is still very strong and present. This chapter looks into the near-home bias in the case of FDI flows when the data are segmented in several ways, one of them being time-wise. Milonidis and Sideris (2008) find supporting evidence that near-home bias effect does diminish over time in a G7 economies analysis because the goods markets become more integrated over time. This hypothesis that the home bias diminishes over time should be tested in the context of FDI. According to Bekaert, 1995; Bekaert and Harvery (1997); Bekaert, Harvey and Lundblad, (2005) and

Levine, (2001) the financial markets liberalisation started in the early 80s and again in the early 1990s. Coincidentally, this division of the sample to before and after the early 90s also divides the sample in half, time wise. Therefore I test the hypothesis that the globally observed near-home bias effects diminishes over time by estimating the model specified previously in section 4.2.

Income Stratification

The classification of the country groups according to the income per capita is taken from the World Bank. They classify the countries in two broad categories: developing and developed. They also provide a more detailed classification of the countries in four categories according to the gross national income (GNI) per capita. These four categories are:

a) *Low income* economies with GNI per capita of US $995 or less

b) *Lower-middle income* economies with GNI per capita from US $996 to $3,945

c) *Upper-middle income* economies with GNI per capita from US $3,946 to $12,195 and

d) *High income* economies with GNI per capita of US $12,196 or more

The aforementioned broad classification of countries as developed and developing generally considers the low and middle income countries as developing. It is useful to perform the analysis on both of these classifications in order to enrich this empirical analysis using data according to different country income groups.

5.2. Econometric specification of the model

This chapter uses the same data as the previous chapter and the estimation objective doesn't change i.e. the goal is to estimate near-home bias in FDI flows. Therefore, the model in this chapter is the same as the one set up in chapter 4.

To examine the impact of near-home bias on FDI across different geographical and income segments, the following regression specification for FDI outflows and inflows is estimated:

Log (FDI outflows $_{i*,j,t}$) = β_0 +

β_{11} log (GDPrec) + β_{12} log (GDPsend) + β_{13} log (Openness rec) + β_{14} log (Openness send) +

β_{21} log (DIST $_{i,j}$) + β_{22} SAMECONT + β_{23} BORDER +

β_{31} ECONORGD + β_{32} LEGALOR +

β_{43} SAMEHIST + β_{44} COMLANG + β_{45} CDindex + $\varepsilon_{i,j,t}$ (5.1a)

Log (FDI inflows $_{i,j*,t}$) = β_0 +

β_{11} log (GDPrec) + β_{12} log (GDPsend) + β_{13} log (Openness rec) + β_{14} log (Openness send) +

β_{21} log (DIST $_{i,j}$) + β_{22} SAMECONT + β_{23} BORDER +

β_{31} ECONORGD + β_{32} LEGALOR +

β_{43} SAMEHIST + β_{44} COMLANG + β_{45} CDindex + $\varepsilon_{i,j,t}$ (5.1b)

Where:

a) When the dependent variable is log (*FDI outflows $_{i*,j,t}$*) it is the logarithm of the levels of FDI outflows in millions of US dollars from country $i*$ to j at time t; country $i*$ represents countries located in either: *Europe; Asia-Pacific; America; individual OECD member country; low-income; lower middle; upper middle or high income country group.* In the case of FDI outflows the whole sample can be divided according to time in which case *FDI outflows $_{i,j,t*}$* is the logarithm of the levels of FDI outflows in millions of US dollars from country i to country j at two possible time periods: the first from 1981-1992 and the second from 1993-2005;

b) When the dependent variable is log (*FDI inflows$_{i,j*,t}$*) it is the logarithm of the level of FDI inflows to country i from country $j*$ at time t; country $j*$ represents countries located on either: *Europe; Asia-Pacific America or Africa.*

The rest of the variables are the same as previously used in chapter 4 and as defined in chapter 3: log (*GDPrec*) is the logarithm of the GDP levels in millions of constant US dollars for the

FDI receiving country. Log (*GDPsend*) is the logarithm of the GDP levels in millions of constant US dollars for the FDI sending country. Log (*Openness rec*) is the ratio of the exports plus imports over GDP for the FDI receiving country. Log (*Openness send*) is the ratio of the exports plus imports over GDP for the FDI sending country. Log(*DIST*) is the logarithm of the distances between the two counties i and j in the bilateral country pairs. *SAMECONT* is a dummy variable that takes the value of one if the two countries in the bilateral country pair are on the same continent. *BORDER* is a dummy variable if the two countries in the bilateral country pair share a border. *ECONORGD* is a dummy variable that has a value of one if the two counties in the bilateral country pair are members of an economic or political organisation (EU, OECD, Commonwealth or NAFTA). *LEGALOR* is a dummy variable that takes the value of one if the two countries in the bilateral country pair have the same legal system origin. *COMLANG* is a dummy variable that takes the value of one if the two countries in the pair share the same language and *SAMEHIST* is a dummy that has the value of one if the two countries in the bilateral country pair share history. CDINDEX is the cultural distance index by Kogut and Singh (1988) between country i and j.

5.3. *Segmented analysis of near-home bias in FDI flows results*

This section presents the results for near-home bias in FDI flows when the data are stratified according to three criteria: geography, time and national income per capita. The results are presented in different sections for each of these segments as well as for FDI outflows and inflows separately. These results can be found in tables 5.1-5.7 while the basic statistical overview of the number of countries across continents was previously presented in tables 3.3 and 3.4.

Table 5.1. Near-home bias in FDI outflows by continent of sending country

Dependant variable is log (FDI outflows $_{i,j,t}$) which equals foreign direct investment outflow from country i to country j at time t, *for the FDI outflows sending country located on a particular continent* (Europe, Asia-Pacific and the Americas); The FDI flows are from the FDI sending country towards the FDI receiving. The explanatory variables are: Log of the GDP of the FDI receiving country; log of the GDP for the FDI sending country; trade openness (ratio of exports plus imports over GDP) for the FDI receiving country; trade openness (ratio of exports plus imports over GDP) for the FDI sending country; the log of the physical distance between the country i and j in kilometres; shared border dummy (value of one if country i and j share a border); shared economic or political organisation dummy (value of one if country i and j share membership in the same economic or political organisation); same legal origin dummy (one if country i and j share the same origin of their legal systems); shared language (one if country i and j share the same official language or language of the minorities); shared history (one if country i and j share history with respect to having had a past colonial relationship or having been part of the same country) and the cultural distance index based on Kogut and Singh (1988). The t-statistics are based on standard errors that have been adjusted for cross-sectional heteroskedasticity using the White (1980) method; Fixed effects used; Note that *, **, *** stand for significant coefficients at the 10%, 5% and 1% level respectively;

Variable	EUROPE (send)	ASIA-PACIFIC (send)	AMERICAS (send)
	Log (FDI outflows)	Log (FDI outflows)	Log (FDI outflows)
C	-9.74 ***	-3.99 ***	-14.19 ***
(Log) GDPrec	0.74 ***	0.75 ***	0.87 ***
(Log) GDP send	1.48 ***	0.43 ***	1.53 ***
Openness rec	0.32 ***	0.40 ***	0.65 ***
Openness send	0.99 ***	-1.73 ***	2.92 ***
(Log) Distance	-0.54 ***	-0.19	0.20
Same Continent	-0.01	0.52 ***	0.68 ***
Border	0.04	NA	0.01
Shared Econ. Org.	0.23 ***	0.22 ***	0.28 ***
Same Legal System	0.10 ***	0.00	0.21 ***
Shared History	0.47 ***	-0.11	0.27 ***
Shared Language	0.23 ***	0.36 ***	0.06
Cul. Dist. Ind.	-0.03 ***	-0.06 ***	-0.10 ***
N	8,818	1,649	837
Adjusted R^2	0.49	0.47	0.60

5.3.1. Near-home bias in FDI by continent

In this analysis the data are divided by continent to control for any pattern among the countries that are investing in countries from the same continent. The data are divided according to the location of the FDI flows sending country on a particular continent. The division of the data by the continent criteria is done in three groups (despite the fact that there are six continents). Antarctica isn't part of the data because it doesn't have sovereign countries or permanent population. The African continent can only be considered for FDI inflows and not possible for FDI outflows. There is a representation for the African countries as a partner country by there isn't a single African country that's a member of the OECD and therefore Africa cannot be a segment of FDI outflows. Finally, I consider Australia and Oceania together with Asia forming a broader continental region, called Asia-Pacific. This is done so because Australia and Pacific data are limited to Australia and New Zealand and it doesn't yield significant analysis. This combination of the two continents (or more commonly of the countries on the Asian Pacific Coast, called Asia Pacific) is frequently done in research studies in geography or economics and finance. Based on the aforementioned properties of the data I divide the data by continent in three groups: Europe, Americas and Asia-Pacific and Africa (for FDI inflows only).

This estimation was done by grouping the bilateral country pairs according to their location on a particular continent. This is a regional consideration which is important because it offers great insight into any major differences between ways of doing business on different continents. The *a priori* expectation is the same as in the general regressions – near-home bias is expected to be present. There might be slight differences due to the differences in the cultures and societies of the peoples inhabiting different continents. There could also be some differences due to the differences in size of the continents – Europe is roughly the size of

Australia and the American and Asia Pacific region has a considerably greater geographic size with a smaller number of countries.

I.   Europe

This section describes the results for near-home bias in FDI flows for the European continent. The results are presented first for FDI outflows then for FDI inflows.

FDI outflows-Europe

This regression in table 5.1 considers FDI outflows country pairs where the FDI sending country is located on the European continent. This is the largest data subset in this analysis because 23 of the 30 OECD countries are on the European continent [see table 3.1 and 3.2 for a statistical breakdown]. The number of observations is 8,818 with 950 (cross sections) different bilateral country pairs across different years. The overall findings are consistent with the full panel analysis of FDI outflows in the previous chapter (table 4.2).

The institutional and cultural proximity variables are all significant and with the expected signs. European countries prefer to invest in institutionally familiar places like the countries with which they share a membership in the same economic or political organisation or the same origin of the legal system. That means that French investors might find it easier to invest in Belgium rather than England. Europeans also prefer to invest in historically, linguistically and culturally familiar places a claim supported by the highly significant variables from this group. When it comes to the physical proximity, the only significant variable is the physical distance variable which is significant and negative confirming the detrimental effect distance has on FDI flows. The shared continent and border variables aren't significant.

In the case of FDI inflows, this estimation has 5,460 observations with 571 different country pairs across the sample period (cross sections). It can be seen in table 5.2.

The institutional and cultural proximity variables groups are all highly significant and with the expected signs in this analysis as well, confirming the findings in FDI outflows. The results tell a slightly different story in the physical proximity group where all three are negative and significant. The distance is expected to have that negative influence on FDI flows. The fact that the shared continent and shared border are negative in this case is slightly puzzling. In the case of FDI inflows, the FDI receiving country is an OECD member whereas the sending country can come from anywhere in the world which in this case may have caused this contradictory finding. Most of the OECD countries are on the European continent but the countries that invest in them are numerous and from all of the other continents.

From the macro variables, three out of four have the expected positive sign, but the trade openness of the receiving country is insignificant.

II. Asia-Pacific

The sample in this analysis is more controlled because it is restricted to four countries in the far-Eastern part of the world that are also members of the OECD: Australia, New Zealand, Japan and Korea and their partner countries. The sample contains around 1,649 observations for FDI outflows with 149 different country pairs and 2,320 observations and 341 cross sections in the case of FDI inflows.

FDI outflows-Asia-Pacific

Given the large distances among the four Asian-Pacific countries (Australia, Japan, Korea and New Zealand) physical proximity is not a significant factor in their foreign investment decisions (the distance variable isn't significant). However, the significant

Table 5.2. Near-home bias in FDI inflows by continent of sending country

Dependant variable is log (FDI inflows $_{i,j,t}$) which equals foreign direct investment inflow to country i from country j at time t, *for the FDI inflows sending country located on a particular continent* (Europe, Asia-Pacific and the Americas); The FDI flows are from the FDI sending country towards the FDI receiving. The explanatory variables are: Log of the GDP of the FDI receiving country; log of the GDP for the FDI sending country; trade openness (ratio of exports plus imports over GDP) for the FDI receiving country; trade openness (ratio of exports plus imports over GDP) for the FDI sending country; the log of the physical distance between the country i and j in kilometres; shared border dummy (value of one if country i and j share a border); shared economic or political organisation dummy (value of one if country i and j share membership in the same economic or political organisation); same legal origin dummy (one if country i and j share the same origin of their legal systems); shared language (one if country i and j share the same official language or language of the minorities); shared history (one if country i and j share history with respect to having had a past colonial relationship or having been part of the same country) and the cultural distance index based on Kogut and Singh (1988). The t-statistics are based on standard errors that have been adjusted for cross-sectional heteroskedasticity using the White (1980) method; Fixed effects used; Note that *, **, *** stand for significant coefficients at the 10%, 5% and 1% level respectively;

Variable	EUROPE (send)	ASIA-PACIFIC (send)	AMERICAS (send)	AFRICA (send)
	Log (FDI inflows)	Log (FDI inflows)	Log (FDI inflows)	Log (FDI inflows)
C	-6.74 ***	-6.26 ***	-10.02 ***	-17.47 ***
(Log) GDPrec	0.69 ***	0.87 ***	0.91 ***	1.15 ***
(Log) GDP send	1.32 ***	0.92 ***	1.25 ***	3.49 ***
Openness rec	0.24	0.49 ***	0.69 ***	0.99 ***
Openness send	0.85 ***	0.49 ***	0.95 ***	-0.38
(Log) Distance	-1.01 ***	-1.00 ***	-0.53 ***	-1.80 ***
Same Continent	-0.44 ***	-0.50 ***	0.12	NA
Border	-0.14 ***	0.31 **	0.31 ***	NA
Shared Econ. Org.	0.30 ***	0.80 ***	0.03	NA
Same Legal System	0.08 ***	0.36 ***	0.06	0.48
Shared History	0.36 ***	-0.08	0.37 ***	-0.04
Shared Language	0.23 ***	0.50 ***	0.37 ***	0.87 ***
Cul. Dist. Ind.	-0.01 ***	-0.01 **	0.01 *	0.03
N	5,640	2,320	1,633	165
Adjusted R^2	0.49	0.46	0.67	0.40

continent dummy clearly suggests that there is a strong preference for mutual foreign investments among themselves in the region. The shared history and legal system aren't significant. However, the shared language is positive and significant and the cultural distance index is negative and significant indicating that a smaller difference in culture stimulates FDI flows.

The openness of the FDI sending country has a negative and significant impact on FDI outflows which isn't consistent with the expectation and is that much more puzzling because the four countries in this region (Australia, Japan, Korea and New Zealand) that are the FDI sending countries in this case can all be considered as open to trade. The other macroeconomic variables are as expected, positive and significant.

FDI inflows- Asia-Pacific

The FDI inflows estimation within this sample of Asian-Pacific countries shows an overall consistency with the expected results. This regression in shown in table 5.2. Of the near-home bias variables only the shared history variable isn't significant whereas the others are significant and with the expected signs.

The distance is negative and significant but so is the shared continent which isn't in accordance with the expectations. This result indicates that there are more FDI inflows to the four OECD member countries in the Asian-Pacific region from partner countries that aren't on the same continent, which isn't too outlandish to consider given the large number of possible partner countries in the other continents in comparison with this one.

Here, the GDP coefficients for both receiving and sending country are significant and have a positive influence on FDI inflows within the Asian-Pacific region and the same is true for the country openness of both the FDI receiving and sending country - it has a stimulating effect on FDI inflows.

These regressions have the highest R^2 from the three continent data subsets, around 60%. This subset has 837 observations and 71 unique country pairs for FDI outflows and 1,633 observations and 230 bilateral country pairs. It consists of three OECD member countries: USA, Canada and Mexico and their FDI partners.

FDI outflows-America

In the case of outflows, same as for Asia-Pacific, the physical distance isn't significant most likely due to the large distances of the continents themselves and between them and the others. The same is true for the shared border. Same as Asia-Pacific the American countries do prefer to invest in countries in their own continent.

Apart from the shared language which is insignificant, the rest of the cultural and institutional familiarity variables are significant and with the expected influence.

All four macroeconomic variables are significant and positive which is fully consistent with the previous analyses.

FDI inflows-America

This case of the FDI inflows to the American countries (USA, Canada and Mexico) from the partner countries located in the rest of the world is not entirely consistent with the previous findings in the variables of interest of this study. Of the five variables in this group, only the shared history and language are positive and significant and have the expected stimulating influence on FDI inflows to this region. The institutional familiarity variables are insignificant as is the cultural distance index. In terms of physical proximity, the inflows significantly come from the bordering neighbours, which means that Mexico, Canada and the

US are most significantly investing amongst themselves. The physical distance has a negative influence on FDI inflows. The macro variables are all positive and significant as expected.

IV.   Africa

While it is impossible to have an African data subgroup for FDI outflows because none of the OECD members is also an African country, in the case of FDI inflows from the African continent to the OECD member countries a small data sample allows us to estimate the regression. Several of the variables are excluded such as: the shared continent; shared border and shared economic and political organisation due to the aforementioned reasons. This leaves us with a sample of 165 observations and just 31 country pairs. The results show that the most deterministic factors for the FDI inflows from the African continent are the macroeconomic variables. The greater the economic wealth in terms of GDP of the sending and receiving countries, the greater the FDI inflows. The greater the trade openness of the FDI receiving country the greater the FDI inflows. The physical distance is the only significant determinant from the physical proximity group and the shared language is the only other significant variable. This indicates that the former colonies (all of whom have the language of the colonizers as one of the official languages) prefer to invest in countries abroad with the same language for example, the former French colonies would prefer to invest in the French speaking countries.

5.3.2. Near-home bias by individual countries

This section performs estimations on each country individually. This strengthens and reaffirms the values of the results obtained from the estimations made on the whole panel dataset. It also helps to identify any country specific tendencies and particularities and offer insights into potential differences between countries which differ according to size and

development level. This analysis shows that the results found overall support the findings in the full panel regressions in the previous sections with some exceptions. The econometric models are adapted to the individual country dataset shortcomings by excluding a particular dummy variable where all of the values take the value of either zero or one (i.e. when the variable becomes non-varying). I only consider as significant variables the coefficients at significance levels of 1% and 5%.

I. FDI outflows by country

Table 5.3 reports the results for the FDI outflows for each country. I wasn't able to run estimation for Canada due to a very small number of observations, which makes the total number of country regressions is 29 instead of 30. In some cases a variable had to be excluded because there weren't any country pairs that had a particular relationship depicted by that dummy variable. This would be the shared border for all island countries, the shared language for some countries that have a language that's not similar to any other and is only spoken in one country (such as: Greece, Hungary and Iceland) and in some cases the shared history variable and the cultural index.

Although the bulk of the results remain broadly similar with the aggregate and continent evidence presented in Tables 4.2 and 5.1, there are nevertheless a number of important points to note. First, near-home bias characteristics are clearly more prominent among the largest FDI investors US, UK, Germany, France and Spain. For these 5 countries, distance, economic organisation, and shared history emerge as important determinants of FDI; with the exception of Germany, the legal origin is also a significant factor in foreign investment decisions by these countries.

Table 5.3. Near-home bias in FDI outflows by individual country

Dependant variable is log (FDI outflows $_{i,j,t}$) which equals foreign direct investment flow from country i to country j at time t; The FDI outflows are from the FDI sending country towards the FDI receiving country. The explanatory variables are: Log of the GDP of the FDI receiving country; log of the GDP for the FDI sending country; trade openness (ratio of exports plus imports over GDP) for the FDI receiving country; trade openness (ratio of exports plus imports over GDP) for the FDI sending country; the log of the physical distance between the country i and j in kilometres; shared continent dummy (value of one if the two country i and j are one the same continent); shared border dummy (value of one if country i and j share a border); shared economic or political organisation dummy (value of one if country i and j share membership in the same economic or political organisation); same legal origin dummy (one if country i and j share the same origin of their legal systems); shared language (one if country i and j share the same official language or language of the minorities); shared history (one if country i and j share history with respect to having had a past colonial relationship or having been part of the same country); cultural distance index (Kogut and Singh, 1988). The t-statistics are based on standard errors that have been adjusted for cross-sectional heteroskedasticity using the White (1980) method; Note that *, **, *** stand for significant coefficients at the 10%, 5% and 1% level respectively.

	Const.	LGDP of FDI rec. country	LGDP of FDI send country	Openness rec. country	Openness of send. country	L distance	Same Cont.	Shared Border	Econ. Organs. Dummy	Legal origin dummy	Shared History	Shared Lang.	CD index
Australia	-12.74 ***	0.67 ***	2.28 ***	0.27 ***	-1.01	-0.41	0.98 *	NA	-0.15	0.49 ***	0.50 ***	0.12	-0.15
Austria	-14.22 ***	0.58 ***	2.56 ***	0.27 ***	0.28	-0.46 ***	0.17	0.19	0.08	-0.54 ***	0.56 ***	0.45 *	-0.07 ***
Belgium	-133.2 ***	0.29	25.91 ***	0.12	-2.57 ***	-0.70 ***	-0.47	0.82 ***	1.07 ***	0.09	NA	-0.36 *	0.17 **
Canada	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Czech R.	-5.35	0.83 ***	1.04	0.49 ***	-1.89	-0.68	-0.17	-0.14	-0.05	0.48 **	1.34 ***	NA	-0.05
Denmark	-49.63 ***	0.86 ***	9.61 ***	0.37 ***	-3.01 ***	-0.31 ***	0.35 **	-0.20 *	0.15	0.32 ***	NA	NA	-0.09 ***
Finland	-28.10 ***	0.83 ***	5.43 ***	0.34 ***	-0.38	-0.60 ***	-0.07	-0.06	0.25 ***	0.18	0.33	0.27	-0.23 ***
France	-37.20 ***	0.88 ***	6.01 ***	0.47 ***	-0.46	-0.61 ***	-0.13	0.19 ***	0.25 ***	0.25 ***	0.44 ***	-0.04	-0.10 ***
Germany	-35.22 ***	0.96 ***	5.38 ***	0.35 ***	-1.92 ***	-0.07	0.38 ***	0.17 ***	0.10 *	-0.47 ***	-0.11	0.49 ***	-0.10 ***
Greece	-24.17 ***	1.12 ***	3.60 ***	0.59 ***	0.14	-0.38 ***	1.01 ***	-0.28	-0.16	-0.35	NA	NA	-0.09 **
Hungary	-23.65 ***	0.83 ***	4.97 ***	0.32 ***	0.31	-1.57 ***	-0.52	1.10 ***	0.30	0.78 ***	-0.42 **	NA	0.00
Iceland	-16.66 ***	0.15	6.39 ***	0.10	-1.20	-2.20 ***	-1.01 ***	NA	0.40 *	0.33	-0.14	NA	NA
Ireland	-53.41 ***	0.58 ***	11.33 ***	0.36 ***	1.95	-2.43 ***	-1.62 ***	NA	0.68 ***	-0.15 ***	-0.04	0.31	-0.23 **
Italy	-29.64 ***	1.13 ***	4.15 ***	0.47 ***	-1.02	0.01	0.99 ***	-0.12 *	-0.21 ***	0.34 ***	NA	0.24	-0.17 ***
Japan	-0.36	1.17 ***	-0.35	0.59 ***	-3.17 ***	-0.31	0.40 **	NA	0.07	-0.43 ****	0.14		-0.05 ***
Korea	-12.16 ***	0.66 ***	2.30 ***	0.15 ***	-1.54 *	-0.60 ***	0.20	NA	-0.11 **	-0.41 ***	-0.78 ***	-0.03	0.05 *
Luxemb.	-141.7 ***	1.02 ***	34.20 ***	0.28 ***	-2.28 ***	-1.50 ***	-0.27	-0.60 **	0.65 ***	0.50 ***	0.30	-0.15	-0.12
Mexico	1066.8	0.71	-193	-1.05	91.8	0.12	-1.97 ***	1.89 ***	-0.05	1.16	-1.80	-0.35	-0.44 ***
Netherl.	-25.1 ***	0.84 ***	4.60 ***	0.35 ***	-1.03 ***	-0.43 ***	0.02	-0.59 ***	0.14 ***	0.03	0.21 ***	0.33 **	-0.05 ***
New Zeal.	11.84 *	0.78 ***	-3.75 **	0.81 ***	-0.36	0.51	2.26 **	NA	-0.25	-0.13	0.63 ***	0.03	-0.11
Norway	-14.8 ***	0.77 ***	2.78 ***	0.56 ***	1.83	-1.09 ***	-0.54 *	-0.23	0.41	0.43	NA	NA	-0.12 ***
Poland	-3.83	1.03 ***	0.25	0.53 ***	2.90 **	-1.43 ***	-0.13	0.01	-0.15	0.03	-0.12	NA	-0.10 ***
Portugal	-19.1 ***	0.78 ***	4.21 ***	0.52 ***	-0.98	-1.66 ***	-0.35 **	0.44 *	-0.05	0.62 ***	1.82 ***	NA	0.13 ***
Slovakia	-49.2 ***	1.31 ***	9.65 ***	1.30 **	-1.60 *	0.23	0.71	1.13 **	-0.72	0.81 ***	0.20	-0.85 ***	0.04
Spain	-32.12 ***	0.83 ***	5.49 ***	0.53 ***	1.74 ***	-1.05 ***	-0.01	0.15 **	0.17 *	0.47 ***	0.52 ***	0.80 ***	-0.09 ***
Sweden	-29.8 ***	1.00 ***	4.78 ***	0.43 ***	0.53	0.01	0.63 ***	0.32 **	0.10	0.17	0.70 ***	-0.44 *	-0.16 ***
Switzerl.	21.33 ***	0.71 ***	-4.43 ***	0.31 ***	2.31 *	-0.30 ***	-0.03	0.07	0.21 ***	-0.35 ***	NA	-0.16	-0.09 ***
Turkey	-4.05 *	0.27 ***	1.20 **	0.34	-2.68 ***	-0.61 ***	-0.46 ***	0.56 ***	0.44 ***	-0.33 ***	-0.35 ***	-0.35 **	NA
UK	-21.87 ***	0.72 ***	3.38 ***	0.30 ***	0.66	-0.26 ***	-0.20	0.08	0.34 ***	0.18 **	0.37 ***	-0.10	-0.02
USA	-6.95 *	0.86 ***	0.30	0.66 ***	5.00 *	0.31 **	0.81 ***	-0.05	0.34 ***	0.21 ***	0.26 ***	0.02	-0.09 ***

There is also a small group of countries like Australia, Luxemburg, Netherlands and Sweden whose foreign investment decisions are also affected by some of the seven near-home bias variables. The remaining 16, relatively small countries, also display some evidence of near-home bias but they are limited across a narrow range of the near-home bias characteristics. It is worth noting, however, that foreign investment decisions by smaller countries are also not always consistent even with the better established economic determinants of FDI. Table 5.3, shows a negative and significant relation between the trade openness of Belgium, Denmark, Germany, Japan, Luxembourg, the Netherlands and Turkey and their outflow of foreign direct investment.

Overall, across the 29 countries the most pertinent near-home bias variables in order of consistency are: distance, cultural index, legal origin, economic organisation, shared history, common border, same continent and common language.

Of the near-home bias variables, the economic organisation dummy is expected to have a positive effect on FDI outflows. Countries are expected to invest in other countries that have similar organisation of the economic system. This variable is significant for 10 of the 29 countries and it doesn't have the expected positive influence on FDI outflows only for Italy.

The same legal origin dummy is also expected to have a positive effect on FDI outflows. In this regression it is significant for 19 of 29 countries. However results show negative coefficient signs for: Austria, Germany, Ireland, Japan, Korea, Sweden and Switzerland. These countries' outflows aren't determined by the similarity of the legal system with their FDI partner countries.

The shared history dummy is statistically significant for 14 of 23 countries and it exhibits a stimulating influence on FDI outflows except for: Hungary, Korea and Turkey where it has a negative coefficient while it has a stimulating effect on FDI outflows for the other 11 countries. The shared language dummy isn't taken into consideration for 6 of the 29 OECD

countries because they don't share linguistic similarity with any other FDI partner in the sample. Of the remaining countries this variable is significant for 5 of 23 countries however it doesn't have the expected positive stimulating influence on FDI outflows for Turkey and Slovakia probably because they share a common language with very few nations. It can be inferred that shared language plays a positive role in the FDI outflows for Germany, the Netherlands, and Spain. The cultural distance index is significant for 18 of 27 countries which makes it very robust. It predominantly has the expected negative sign indicating that countries that have lesser cultural distance will attract more FDI flows. It only has an unexpected (positive) influence in Portugal.

Of the proximity variables, the distance variable is expected to be negative with less FDI outflows to countries that are more distant from the FDI outflows sending country. The coefficients are significant for 19 of the 29 countries and have the expected negative sign for all of the statistically significant variables except in the case of the US where the distance has a positive effect on FDI outflows possibly because as the US is the world's largest direct investor, it has a very wide range of countries where it invests.

The shared continent dummy is significant for 13 of 29 countries and is expected to increase FDI outflows if the country pair is on the same continent. Negative influence on FDI outflows is found in: Iceland, Ireland, Mexico, Portugal and Turkey. The shared border dummy variable isn't considered for 6 of the 29 OECD countries. From the rest it's significant for 11 of 23 countries and even though it mostly has a positive influence on FDI outflows it does exhibit a negative sign in the case of the Netherlands and Luxembourg where it decreases FDI outflows with bordering countries.

The macroeconomic variables are significant for most countries. The GDP of the FDI receiving country are significant in 26 of the 29 countries and 23 of 29 for the GDP of the sending country. I expect a positive impact of the GDP variables on FDI outflows. The larger

the economy the higher the FDI outflows. The openness of the FDI outflows receiving variable is significant for 25 of 29 countries and it has a positive effect on FDI outflows for all significant coefficients. The openness of the FDI outflows sending country however is significant only for 7 of the 29 countries and it has a negative and significant influence for all 7 countries – they seem to engage less in FDI outflows when their openness is higher.

II.   FDI inflows by country

This section describes the results of the geographical analysis of FDI inflows by individual country. These results support the findings for the corresponding analysis for FDI outflows. Table 5.4 reports results for the FDI inflows for each country. I'm unable to perform an estimation for Canada and Iceland which makes the total number of countries 28, in this case.

From the institutional proximity variable group, the shared economic or political organisation dummy is significant for 16 of the 28 countries. All of the significant coefficients have a positive sign. This variable shows that investors prefer to invest in countries that have a similar organisation of the economic system to their own. The legal origin dummy is significant for 15 of 28 countries. It also has a positive expected coefficient sign. The sign is negative for four (Austria, Poland, Portugal and the UK) of the 15 significant coefficients. That means that FDI inflows are stimulated by institutional familiarity represented here by the same legal system origins. The shared history variable is significant for 8 of 22 countries and it has the expected positive influence on FDI inflows in all significant variables. The shared language is significant for 9 of 21 countries and it doesn't have the expected positive sign in the cases of: Belgium, Germany, Hungary and Switzerland. The cultural distance index is significant for 16 of the 28 countries however unlike the sign consistency in the case of FDI outflows, in this case there are 9 of the 16 significant countries that have a positive sign for

Table 5.4. Near-home bias in FDI inflows by individual country

Dependant variable is log (FDI inflows $_{i,j,t}$) which equals foreign direct investment inflow to country i from country j at time t; The FDI inflows are from the FDI sending country towards the FDI receiving country. The explanatory variables are: Log of the GDP of the FDI receiving country; log of the GDP for the FDI sending country; trade openness (ratio of exports plus imports over GDP) for the FDI receiving country; trade openness (ratio of exports plus imports over GDP) for the FDI sending country; the log of the physical distance between the country i and j in kilometres; shared continent dummy (value of one if the two country i and j are one the same continent); shared border dummy (value of one if country i and j share a border); shared economic or political organisation dummy (value of one if country i and j share membership in the same economic or political organisation); same legal origin dummy (one if country i and j share the same origin of their legal systems); shared language (one if country i and j share the same official language or language of the minorities); shared history (one if country i and j share history with respect to having had a past colonial relationship or having been part of the same country); cultural distance index (Kogut and Singh, 1988). The t-statistics are based on standard errors that have been adjusted for cross-sectional heteroskedasticity using the White (1980) method; Note that *, **, *** stand for significant coefficients at the 10%, 5% and 1% level respectively.

	Const.	LGDP of FDI rec. country	LGDP of FDI send country	Openness rec. country	Openness of send. country	L distance	Same Cont.	Shared Border	Econ. Organs. Dummy	Legal origin dummy	Shared History	Shared Lang.	CD index
Australia	-6.12	0.94	1.11***	0.50	0.93***	-1.10**	1.02**	NA	0.72**	0.04	0.61***	-0.06	-0.03
Austria	-211.32***	40.39***	1.17***	-8.93***	0.43***	-0.12	0.43	0.51	0.04	-0.57***	-0.20	1.20***	0.03*
Belgium	-172.87***	33.50***	0.91***	-4.74***	0.38***	-0.95*	-0.22	0.41	0.34	-0.02	0.53	-0.30***	-0.01
Canada	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Czech R.	10.79	-2.35	1.23***	0.63	0.46***	-2.07***	-0.75***	-0.07	0.90***	-0.21*	-0.07	NA	0.05***
Denmark	-44.81***	8.55***	1.03***	-2.49***	0.72***	-0.64***	-0.12	-0.26***	0.75***	0.32***	NA	NA	-0.05***
Finland	-33.53***	6.84***	0.97***	0.30	0.46***	-1.72***	-0.61**	-0.21	0.74***	0.28	0.18	0.33	-0.04***
France	-32.82***	5.49***	0.86***	-1.12***	0.52***	-1.15***	-0.56***	0.47***	0.72***	0.14***	0.44***	-0.02	0.04***
Germany	-27.10***	4.53***	0.78***	-1.06**	0.49***	-0.96***	-0.41***	0.07	0.54***	0.35***	-0.42	-0.42***	-0.01
Greece	10.01**	-2.45**	1.02***	-6.65***	0.51***	-0.20	0.71	-1.42***	0.13	0.62***	NA	NA	0.03**
Hungary	-22.39***	4.03***	1.30***	-0.09	0.77***	-1.24***	-0.30	0.93**	1.00***	-0.33	-0.37	-1.34***	0.04***
Iceland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ireland	-19.82***	4.45***	0.78***	-0.60	0.14	-1.13***	-0.63**	NA	0.19	-0.19	-0.14	0.30	-0.01
Italy	-33.05***	4.23***	1.26***	-1.90**	1.02***	0.36**	1.05***	0.39***	0.21**	0.23***	NA	0.86***	-0.02***
Japan	-5.31	-0.81	1.29***	-2.39***	1.82***	0.87	-0.30	NA	0.12	0.41***	0.66**	NA	0.02***
Korea	-12.16***	0.80	1.09***	0.86**	0.90***	0.17	-0.19	NA	0.08	0.39***	0.93***	0.03	0.05***
Luxemb.	-115.37***	27.15***	1.40***	-2.14***	0.74***	-1.09*	0.15	-0.57**	0.18	0.58***	-0.02	-0.10	-0.02
Mexico	15.80**	-2.84**	1.71***	-0.38	0.79***	-2.22***	-0.51***	-1.01***	0.22***	-0.02	0.29*	0.75***	0.04***
Netherl.	-17.96***	3.55***	0.85***	-0.75	0.35***	-1.09***	-0.69***	-0.48***	0.69***	-0.10	0.23	0.58***	-0.03***
New Zeal.	-12.36	2.40	1.00***	1.00	0.92***	-1.18	0.80	NA	0.44**	0.06	0.98***	0.17	-0.03
Norway	-17.86***	1.15**	1.52***	6.26***	1.41***	-0.32	0.33	0.47**	0.16	1.00***	NA	NA	0.02
Poland	1.82	-0.93	1.19***	0.52	0.69***	-1.02***	0.25**	0.00	0.57***	-0.59***	0.08	NA	0.01**
Portugal	-27.48***	5.95***	0.72***	2.37***	0.17	-1.69***	-0.09	-0.47*	-0.02	-0.25***	NA	0.78**	-0.01
Slovakia	-12.52***	1.43	1.37***	1.42***	0.81***	-1.34**	-0.12	-1.01*	0.92***	0.46	0.94***	0.11	0.01
Spain	-50.00***	7.88***	1.91***	-1.02	1.73***	-1.23***	0.31	-0.29	0.30	-0.12	0.63***	-0.20	0.00
Sweden	-54.14***	9.52***	1.37***	-0.27	0.66***	-0.88**	0.12	0.23	0.35**	0.33*	0.18	0.36	-0.04***
Switzerl.	13.79	-3.06***	1.16***	3.13***	1.19***	-1.33**	-1.51**	0.68**	0.22	-0.08	NA	-0.72**	0.04
Turkey	-11.61*	1.32	1.10***	2.93**	0.26*	-0.76***	0.09	-0.63	-0.07	0.63***	NA	NA	0.05***
UK	-14.37***	3.04***	0.64***	-2.02***	0.38***	-1.35***	-1.34***	-0.68***	1.07***	-0.52***	0.72***	0.03	-0.04***
USA	-23.13***	2.34***	1.33***	-0.21	1.13***	0.22	1.06***	-0.99***	1.16***	0.22**	0.19*	0.00	-0.02**

this variable indicating that in the case of FDI inflows the cultural similarity isn't a very strong predictor of FDI inflows.

The distance is significant for 20 of the 28 countries. The expectation is that the distance to have a negative coefficient estimate. The a priori expectation is that the further away the FDI partner country, the lesser are the FDI flows. In this regression the distance coefficients have a negative sign all countries except Italy and Japan where the greater distance has a positive effect on FDI inflows.

Of the macroeconomic variables, the GDP of the FDI receiving country and the GDP of the FDI sending country are significant as expected. The expected effect of the GDP is positive. The higher the GDP, the larger is the economy and thus the larger the FDI inflows towards it. The GDP coefficients of the FDI receiving country are significant for 20 out of the 28 countries with a negative sign for Greece and Mexico. The GDP coefficients of the FDI sending country are significant and positive for all 28 out of the 30 countries which accents the overwhelming importance that the country must have a strong GDP for it to be a foreign direct investor to the OECD member countries. The country openness coefficients are significant for 14 of the 28 countries and like for the country openness in the FDI outflows sending country (which is its counterpart in this analysis) there are a lot of negative coefficients (9 of 14), indicating that most of the FDI inflows happen in the OECD member countries with smaller openness to trade. The country openness for the FDI inflows sending country is significant for 25 of 29 countries and it has the expected positive effect on FDI inflows – the greater the trade openness of the FDI sending country the greater the FDI inflows from that country.

5.3.3. Near-home bias in FDI flows across time

The sample is divided in two sub-periods, 1981-1992 and 1993-2005 in order to examine if there is any change in the presence of near-home bias over time. This is important knowing that there was significant capital market liberalization in the world in the early 90s. This might influence the near-home bias factors after the 90s in the sense that they might be less important due to greater capital mobility. The results of these two regressions are shown in tables 5.5 and 5.6 for FDI outflows and inflows, respectively. They support the general results from tables 4.2 and 4.3. The results for this analysis are presented in three columns: the first one shows regression for the entire sample period, from 1981 to 2005, the second and third columns show the regressions for the divided samples, from *1981-1992 and 1993-2005* respectively.

I.   FDI outflows

The results for the near-home bias across time periods for FDI outflows are presented in table 5.5. In general it can be observed that the institutional and cultural proximity factors have remained prevalent across time. The same can be said about the macroeconomic and physical proximity group of factors.

In the institutional proximity group, the *shared economic and political organisation* variable is significant and positive in both time periods indicating that in the case of FDI outflows this kind of institutional proximity remains important with respect to the investment choices of the OECD members across time. The *shared legal system origin* is also positive and significant for both time sub-periods indicating that institutional familiarity doesn't stop being important with time and at various capital market liberalisation degrees.

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Table 5.5. Near-home bias in FDI outflows in two sub-periods;

Dependant variable is log (FDI outflows $_{i,j,t}$) which equals foreign direct investment flow from country i to country j at time t; the time is split in two sub-periods: 1981-1992 (2) and 1993-2005 (3). The FDI outflows are from the FDI sending country towards the FDI receiving country. The explanatory variables are: Log of the GDP of the FDI receiving country; log of the GDP for the FDI sending country; trade openness (ratio of exports plus imports over GDP) for the FDI receiving country; trade openness (ratio of exports plus imports over GDP) for the FDI sending country;   the log of the physical distance between the country i and j in kilometres; shared continent dummy (value of one if the two country i and j are one the same continent); shared border dummy (value of one if country i and j share a border); shared economic or political organisation dummy (value of one if country i and j share membership in the same economic or political organisation); same legal origin dummy (one if country i and j share the same origin of their legal systems); shared language (one if country i and j share the same official language or language of the minorities); shared history (one if country i and j share history with respect to having had a past colonial relationship or having been part of the same country); cultural distance index (based on Kogut and Singh (1988)); The t-statistics are based on standard errors that have been adjusted for cross-sectional heteroskedasticity using the White (1980) method; Fixed effects used; Note that *, **, *** stand for significant coefficients at the 10%, 5% and 1% level respectively;

	(1)	*(2)*	*(3)*
	(Log)FDI Outflows 1981-2005	(Log)FDI Outflows 1981-1992	(Log)FDI Outflows 1993-2005
C	-9.15***	-11.12***	-9.09***
(Log) GDPrec	0.75***	0.79***	0.75***
(Log) GDP send	1.31***	1.25***	1.38***
Openness rec	0.36***	0.60***	0.33***
Openness send	0.89***	1.31***	0.91***
(Log) Distance	-0.46***	0.00	-0.57***
Same Continent	0.10***	0.30***	0.08***
Border	0.04	0.19***	-0.01
Shared Econ. Org.	0.16***	0.30***	0.11***
Same Legal System	0.12***	0.09***	0.13***
Shared History	0.36***	0.33***	0.38***
Shared Language	0.30***	0.27***	0.29***
Cul. Dist. Index	-0.05***	-0.09***	-0.04***
N	**11,304**	**3,530**	**7,774**
Adj. R^2	**0.50**	**0.54**	**0.50**

In the cultural proximity group of variables in the case of FDI outflows, the *shared history* and *shared language* are both positive and statistically significant in both sub-periods (1981-1992 and 1993-2005). The OECD member countries prefer to invest in culturally proximate locations, with which they share similar history and linguistic similarity. The *cultural distance index* has the expected negative sign in both sub-periods indicating that the greater is the cultural distance between two nations the lesser are the FDI flows between them.

There is a minor difference in the sub-period regressions for the proximity group of variables. The *shared continent* variable is positive and significant over time indicating that the preference to invest within the same continent hasn't changed over time. An interesting finding comes from the *physical distance* variable which isn't significant for the earlier period (1991-1992) but is highly statistically significant for the later period (1993-2005). It appears that the physical distance plays a greater role now that the capital markets are more liquid. This means that the investors have the luxury of more choice of investment locations and they prefer to invest nearby. The *shared border* variable isn't significant in the second, later period while it is significant in the first period.

The macroeconomic group of variables are positive and significant for the two sub-periods and both variables. The preference to invest in countries that are more *open* and have a greater *economic size* hasn't changed throughout time and remains the most basic predictor of economic flows.

In his paper on the limits of financial globalization Stulz (2005) argues that the near-home bias in equity investments has diminished over time but remains strong. I do not find supporting evidence to show that near-home bias in FDI has diminished over time. In fact, it is a prevailing driving force in FDI outflows over time without signs to be reducing.

Table 5.6. Near-home bias in FDI inflows in two sub-periods;

Dependant variable is log (FDI inflows $_{i,j,t}$) which equals foreign direct investment inflow to country i from country j at time t; the time is split in two sub-periods: 1981-1992 (2) and 1993-2005 (3). The FDI inflows are from the FDI sending country towards the FDI receiving country. The explanatory variables are: Log of the GDP of the FDI receiving country; log of the GDP for the FDI sending country; trade openness (ratio of exports plus imports over GDP) for the FDI receiving country; trade openness (ratio of exports plus imports over GDP) for the FDI sending country; the log of the physical distance between the country i and j in kilometres; shared continent dummy (value of one if the two country i and j are one the same continent); shared border dummy (value of one if country i and j share a border); shared economic or political organisation dummy (value of one if country i and j share membership in the same economic or political organisation); same legal origin dummy (one if country i and j share the same origin of their legal systems); shared language (one if country i and j share the same official language or language of the minorities); shared history (one if country i and j share history with respect to having had a past colonial relationship or having been part of the same country); cultural distance index (based on Kogut and Singh (1988)); The t-statistics are based on standard errors that have been adjusted for cross-sectional heteroskedasticity using the White (1980) method; Fixed effects used; Note that *, **, *** stand for significant coefficients at the 10%, 5% and 1% level respectively;

	(1)	*(2)*	*(3)*
	(Log)FDI inflows 1981-2005	(Log)FDI inflows 1981-1992	(Log)FDI inflows 1993-2005
C	-6.78***	-4.49***	-6.66***
(Log) GDPrec	0.80***	0.56***	0.81***
(Log) GDP send	1.04***	1.00***	1.05***
Openness rec	0.38***	-0.76***	0.48***
Openness send	0.54***	0.56***	0.53***
(Log) Distance	-0.84***	-0.86***	-0.95***
Same Continent	-0.17***	-0.28*	-0.19***
Border	-0.05*	-0.08***	-0.08**
Shared Econ. Org.	0.61***	0.39***	0.72***
Same Legal System	0.16***	0.12**	0.18***
Shared History	0.19***	0.21***	0.15***
Shared Language	0.42***	0.38***	0.42***
Cul. Dist. Index	0.004**	0.00	-0.01***
N	9,758	2,989	6,769
Adj. R^2	0.52	0.50	0.54

The analysis of near-home bias across time in the case of FDI inflows is shown in table 5.6. The overall findings from the previous table as well as the full panel analysis from the previous chapter are generally confirmed with some minor exceptions.

In the institutional proximity group, the *shared economic and political organisation* and *shared origin of the legal system* variables are both positive and significant across the both time periods in this analysis. The institutional proximity in the case of FDI inflows confirms the importance of institutional familiarity in FDI flows.

The cultural group of variables shows that the *shared history* and *shared language* variables are both significant and positive. This shows that cultural proximity also remains to be significant in the case of FDI inflows. The *cultural distance index* is only significant in the case of the second period (1992-2005) whereas it is not for the first one (1981-1992).

In the physical proximity group of variables, the *physical distance* is both significant and negative as expected indicating that in the case of FDI inflows (to the OECD countries), the distance matters over time and this hasn't changed over time. The *shared continent* is significant only in the second sub-period but is negative indicating that in the case of FDI inflows, they come to the host countries from another continent. The same issue can be noted for the *shared border* which is significant and negative in both sub-periods which means that the FDI inflows happen from more distant counties than immediate neighbours.

In the case of the macroeconomic variable group, the *GDP* of the sending and receiving countries is both positive and significant determinant of FDI inflows in both sub-periods. The *openness* of the sending country is positive and significant in both cases while it is negative in the case of the receiving country in the early sub-period (1981-1992). In general, the FDI outflows analysis is somewhat more pronounced and consistent that the FDI inflows analysis in the case of near-home bias in FDI flows across time.

Table 5.7. Near-home bias in FDI outflows to developing/developed countries

Dependant variable is log (FDI outflows $_{i,j,t}$) which equals foreign direct investment outflow from country i to country j at time t, *when the FDI receiving country is 'developed' or 'developing' according to the World Bank classification*; The FDI flows are from the FDI sending country towards the FDI receiving. The explanatory variables are: Log of the GDP of the FDI receiving country; log of the GDP for the FDI sending country; trade openness (ratio of exports plus imports over GDP) for the FDI receiving country; trade openness (ratio of exports plus imports over GDP) for the FDI sending country; the log of the physical distance between the country i and j in kilometres; shared border dummy (value of one if country i and j share a border); shared economic or political organisation dummy (value of one if country i and j share membership in the same economic or political organisation); same legal origin dummy (one if country i and j share the same origin of their legal systems); shared language (one if country i and j share the same official language or language of the minorities); shared history (one if country i and j share history with respect to having had a past colonial relationship or having been part of the same country) and the cultural distance index based on Kogut and Singh (1988). The t-statistics are based on standard errors that have been adjusted for cross-sectional heteroskedasticity using the White (1980) method; Fixed effects used; Note that *, **, *** stand for significant coefficients at the 10%, 5% and 1% level respectively;

Independent Variables ↓ / Dependent Variable →	Developing countries Log (FDI outflows)	Developed countries Log (FDI outflows)
C	-7.22 ***	-4.30 ***
(Log) GDPrec	0.72 ***	0.73 ***
(Log) GDP send	0.69 ***	0.70 ***
Openness rec	0.20 ***	0.40 ***
Openness send	2.45 ***	2.41 ***
(Log) Distance	-0.01	-0.76 ***
Same Continent	0.44 ***	-0.22 ***
Border	0.22 ***	-0.15 ***
Shared Econ. Org.	-0.11 **	0.33 ***
Same Legal System	0.15 ***	0.16 ***
Shared History	0.58 ***	0.26 ***
Shared Language	0.17 ***	0.35 ***
Cul. Dist. Ind.	0.08 ***	-0.08 ***
N	3,630	7,674
Adjusted R^2	0.45	0.50

5.3.4. Near-home bias in FDI outflows across country income groups

This section presents the results of near-home bias in FDI outflows in different country income groups. This classification is taken from the World Bank. Because of data restrictions this analysis can only be estimated for the case of FDI outflows.

I.   Near-home bias in FDI outflows to developing or developed countries

The results of near-home bias in FDI outflows in developing and developed countries are presented in table 5.5. The developing countries are generally the low and middle income countries. It helps to broadly group them together to increase the number of observations and compare the results when they are further divided into more income groups when the regressions have fewer observations.

Developing countries

The results for near-home bias in FDI outflows into developing countries are in the left side of table 5.5. The motives for companies investing in lower income countries are diverse and range from the resource seeking investments when there isn't much of a choice to low cost labour seeking investments. These results will help determine which factors are most important when companies decide to invest in poorer countries.

In the institutional proximity group of variables, *the shared economic and political organisation* dummy variable is significant at the 5% level however with a negative sign which is contrary to the expectation. One possible explanation for this could be that the developing countries are less likely to be in many of the international economic or political organisations where the OECD countries are members. The *shared legal system origin* variable is positive and significant indicating the preference for the OECD countries to invest in developing countries with familiar institutional structure. In the cultural proximity group,

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the cultural distance index is, contrary to expectations, positive and significant. This indicates that countries with greater distance in culture attract higher FDI flows. A possible explanation for this would be that the majority of the low income countries are in different continents from the OECD countries which also makes them more culturally different in the sense that this index measures. This doesn't deter FDI flows to these places. The *shared history* and the *shared language* are positive and statistically significant indicating that investments in the developing countries are preferred to be in places with higher cultural familiarity. This is important information for developing countries since when it comes to FDI flows, they usually are dependent on FDI inflows for technological know-how spillovers as well as unemployment reduction effects that they may have in the host economy. The significance of these factors points out that if a richer OECD country decides to invest in for example, a developing country in Africa, it will invest in a country with which it shares a language and history. That means that the UK, France or Belgium will seek to invest more in their own former colonies (which are all now considered to be developing countries).

The main finding in the physical proximity variable group is that the *physical distance* isn't statistically significant even though the distance is one of the most robust variables in any international flows analysis. This suggests that in the case of investing in developing countries the physical distance is a neglected factor because the motives for investing in these countries vary and are not necessarily deterred by the sheer physical distance. The *shared continent* and *border* are positive and significant indicating that there is a greater chance that the OECD countries will invest in a nearby regional developing country if it's available. This makes sense especially when we consider that some MNEs from the services industry are seeking the nearest developing market to expand their operations into and make use of economies of scale and the profits from perhaps lesser competition on the markets.

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The macroeconomics factors are all positive and significant. The greater the *GDP* of both the FDI sending and receiving country the greater the FDI outflows; the same is true for *country openness*: the greater the openness of the sending and receiving countries, the greater the FDI outflows.

Developed countries

The results for near-home bias in FDI outflows into developed countries can be found on the right side of table 5.5. This regression follows closely the general findings for near-home bias in FDI flows and is very similar to the findings in the full panel analysis and the European analysis. The only difference is that the *shared continent and border* aren't statistically significant in this case and *the physical distance* is the only significant variable in the physical proximity group. This is the exact opposite result when it is compared with the previous analysis on developing countries where the physical distance was the only insignificant variable. The institutional proximity group shows that both of its variables, the shared *economic and political organisation and legal origin* variables are positive and significant indicating that greater institutional proximity results in greater FDI outflows between developed countries. The same is true for the cultural proximity between countries. The *shared history and language* variables increase the FDI outflows in developed countries. The *cultural distance index* is negative and significant which as expected, shows that there are less FDI outflows to more culturally distant places. In the macroeconomic variable group, all four variables show the expected finding that the greater the *GDP* and *country openness* of both the sending and receiving country, the greater will the FDI outflows be to developed countries.

Table 5.8. Near-home bias in FDI outflows to different income group countries

Dependant variable is log (FDI outflows $_{i,j,t}$) which equals foreign direct investment outflow from country i to country j at time t, *when the FDI receiving country is part of one of the four different income groups according to the World Bank*; The FDI flows are from the FDI sending country towards the FDI receiving. The explanatory variables are: Log of the GDP of the FDI receiving country; log of the GDP for the FDI sending country; trade openness (ratio of exports plus imports over GDP) for the FDI receiving country; trade openness (ratio of exports plus imports over GDP) for the FDI sending country; the log of the physical distance between the country i and j in kilometres; shared border dummy (value of one if country i and j share a border); shared economic or political organisation dummy (value of one if country i and j share membership in the same economic or political organisation); same legal origin dummy (one if country i and j share the same origin of their legal systems); shared language (one if country i and j share the same official language or language of the minorities); shared history (one if country i and j share history with respect to having had a past colonial relationship or having been part of the same country) and the cultural distance index based on Kogut and Singh (1988). The t-statistics are based on standard errors that have been adjusted for cross-sectional heteroskedasticity using the White (1980) method; Fixed effects used; Note that *, **, *** stand for significant coefficients at the 10%, 5% and 1% level respectively;

Independent Variables ↓	Dependent Variable→	Low-income group ($995 or less) Log (FDI outflows)	Lower-middle income group ($996-$3,945) Log (FDI outflows)	Upper-middle income group ($3,946 – $ 12,195) Log (FDI outflows)	High income group ($ 12,195 or more) Log (FDI outflows)
C		-5.78 ***	-6.38 ***	-7.64 ***	-3.69 ***
(Log) GDPrec		0.34 ***	0.69 ***	0.83 ***	0.72 ***
(Log) GDP send		0.58 **	0.87 ***	0.59 ***	0.66 ***
Openness rec		0.22 *	0.66 ***	0.12 **	0.42 ***
Openness send		0.26	1.89 ***	3.07 ***	2.51 ***
(Log) Distance		0.30	-0.55 ***	0.09	-0.90 ***
Same Continent		NA	0.45 ***	0.39 ***	-0.37 ***
Border		NA	NA	0.22 ***	-0.21 ***
Shared Econ. Org.		NA	NA	-0.24 ***	0.50 ***
Same Legal System		0.01	0.08 **	0.09 *	0.17 ***
Shared History		0.47 ***	0.45 ***	0.66 ***	0.23 ***
Shared Language		0.07	0.05	0.28 ***	0.38 ***
Cul. Dist. Ind.		NA	0.10 ***	0.10 ***	-0.08 ***
N		**371**	**1,649**	**2,324**	**7,476**
Adjusted R^2		**0.36**	**0.47**	**0.45**	**0.51**

The results for near-home bias in FDI outflows into four different income group countries can be found on the right side of table 5.8. The division follows the World Bank classification of all countries into one of four income groups according to the country's gross national income. This classification divides the observations unevenly with the smallest number of observations in the first, low-income country group and the highest in the last high income group. The classification is done based on the FDI receiving country being classified into one of these four groups.

Low-income group

This regression has only 371 observations and only three of all available variables are statistically significant. Four of the variables (culture distance index, shared economic or political organisation, shared border and shared continent) weren't available for this estimation. Of the 8 remaining, three variables are statistically significant: *the GDP of the sending and receiving countries and the shared history*. This indicates that the FDI outflows from the OECD member countries towards the lowest income group countries are greatly determined by the GDP levels in both countries as well as the cultural proximity represented through the shared history variable. This regression also fits the expectation that given the choice, the former colonisers like the UK and France for example would invest in one of their former colonial countries in Africa as opposed to other African countries. The low income country group mostly contains African countries and their shared colonial past is represented through the shared history group. These results also show the importance of having several indicators for cultural proximity instead of just considering one such as Hofstede's cultural distances.

The lower-middle income country group regression has 1,649 observations which is a great deal more than the previous group and also has the availability of many of the variables which weren't available in the previous regression. All four *macro variables* are positive and significant indicating that the macroeconomic factors are all important across countries with different incomes.

In the institutional proximity group, the *shared economic and political union* variable isn't available while the *shared legal system origin* is positive and significant indicating that the OECD countries prefer to invest in lower-middle income country groups with similar institutional organisation.

In the cultural proximity variable group, the *shared history* is significant and positive, the same as in the previous income group while the *shared language* variable isn't significant. The *cultural distance index* is positive and significant indicating that contrary to expectations, the FDI outflows in lower-middle income county groups do occur between peoples with difference social culture but in spite of this there are FDI flows. These results point out to the fact that the interpretation of cultural similarity as determinant of FDI flows should be done with caution.

In the physical proximity group, the *shared border* isn't available while the *shared continent* variable is positive and significant indicating that where possible, the OECD member countries will elect to invest in a lower middle country located on their own continent. This claim is supported with the negative sign on the *physical distance* variable indicating that as distance from the lower middle income country grows there is less FDI outflows towards it.

This income group has 2,324 observations which is much more than the previous country group estimation. This is also reflected by the fact that all of the variables are available for this estimation. The results are overall consistent with some exceptions.

The institutional proximity group shows a negative and significant *shared membership to an economic or political organisation* variable indicating that this isn't a shared feature among the country pairs when it comes to investing in upper-middle income group countries. The *shared origin of the legal system* isn't significant.

In the cultural proximity variable group, the *shared history* and *shared language* variables are positive and significant indicating the increased importance of cultural similarity when it comes to investing to richer countries (as opposed with the previous groups). In this case as well as the previous income group, the *cultural distance index* is positive and significant which is contrary to the expected. This indicates that the socio-cultural traits of nations that are captured by Hofstede's cultural dimensions aren't always the best representative for the cultural familiarity which increases the FDI flows among countries.

The physical proximity as represented through the *physical distance* variable isn't significant in this analysis however the *shared continent and shared border* variables are both positive and significant and capture the importance of physical proximity in investments to upper-middle income group countries. All four of the *macroeconomic variables* are positive and significant which confirms that when it comes to the income stratification of the sample, the macro variables prove to be especially important for any destination of FDI flows.

High Income Group

This regression has the highest number of observations, 7,476 and all of the variables are available. In terms of the significance of the variables, three of the four variable groups have

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great consistency with the expected results while the proximity variable group has some exceptions.

The institutional proximity variable group shows its two variables, *the shared economic and political organisation and the shared origin of the legal system* as positive and significant in predicting the FDI outflows to high income countries. This indicates that regardless of the fact that it may come to investing in rich countries which presumably have highly developed and adaptable institutions for foreign investments, direct investors still prefer to invest in countries where they have institutional similarity represented with the two variables in this group.

In the cultural proximity group, all three variables have the expected sign and are statistically significant. The *shared history* and *shared language* are positive and significant indicating the importance for countries to share this kind of cultural similarity regardless of the fact that it comes to investing among high income countries. The *cultural distance index* is negative and significant indicating that socio-cultural traits matter when there is a choice of investments in high income countries.

The physical proximity group shows the greatest discrepancy with the general results with the *physical distance* variable being negative and significant as expected. The other two, the *shared continent and shared border* variables are negative and significant which indicates that when it comes to investing in rich countries, the distance matters less. All four of the *macroeconomic variables* are positive and highly significant indicating that the economic size and openness to trade aren't negligible at any income level of the countries in the bilateral country pairs.

5.4. *Conclusion*

This segmented analysis of near-home bias in FDI flows shows that there is home country bias at regional and country levels, across time and various income country groups. The

geographic analysis confirms the general panel results from the previous chapter with the continent analysis offering much stronger evidence of near-home bias and the country analysis having greater specificity across countries.

The time sub-period analysis splits the sample in two consistent with the capital market liberalisation period. One of the main logical reasons why this proneness from direct investors to near-home bias would be observed is the fact that there were many obstacles in the capital markets. If this is true then we should also observe these near-home bias effects lessen over time. This analysis finds no supporting evidence that would support that the near-home bias has diminished over time.

Finally, FDI flows to countries of different income groups for different reasons. It can be observed that the home country bias is persistent across different country income groups. The direct investments outflows into high-income countries are strongly prone to institutional and cultural familiarity and proximity. The same can be observed for low-income countries. This regression also shows that there is no substitute for good macroeconomic properties of countries. However, economic size isn't something that can change overnight and most of the countries in the world can be considered to be average. If they wish to attract more FDI and subsequently enjoy the benefits to the economy that come with FDI inflows they should pay attention to taking advantage of any of the familiarity and proximity factors which seem to be especially important when the FDI decisions are made.

Considering one behavioural finance concept such as near-home bias naturally leads to the question if other known issues in this area of finance might influence FDI flows. In the next chapter I consider the possibility that there might be herding among FDI investors which has been already documented for various investors in the equity markets.

6. Herding in FDI Outflows

6.1. *Introduction*

The purpose of this chapter is to test for the presence of herding in FDI outflows. Herding is a well known phenomenon in the equity markets but it hasn't so far been tested in the context of FDI flows. Due to the capital markets liberalisation in the past twenty years there is an increased possibility for companies to invest abroad in a vast number of countries. This possibility makes them susceptible to the same issues like investors in the equity markets. The data used in this analysis is as described in chapter 3. Tables 3.6a, 3.6b and 3.11 provide the descriptive statistics and correlation matrix of the data used in the analysis in this chapter as discussed previously in the data chapter. In the sections below I develop the empirical model for the econometric analysis and further discuss the results.

The term herding behaviour was initially used by economists to explain people's proneness to follow fashions and fads (Rook, 2006). Its origins in social psychology refer to the instinctive tendency to behave like the others (Fiol and O'Connor, 2003). From an evolutionary stance it has an adaptive function (Devenow and Welch, 1996). Animals travel in herds to protect themselves against the unknown surroundings and it's the same adaptive motivation behind the decisions of financial investors to follow others (Prechter, 2001). This phenomenon of herd behaviour has been well documented in the equity markets but it's not at all common to see it in the context of FDI.

There are several hypotheses tested in this chapter. First, I test whether FDI investors herd around a world leader and a regional leader contemporaneously (during the same time period). Then, I test to see if portfolio investors herd FDI investors and whether the amount of regional investments herds other FDI investors inter-temporally (in different time periods).

6.2. Model

Measuring herding can be a very elusive task (Welch, 2000). It is usually defined (Sias, 2004) as investors buying or selling equity during the same period *t*, which means it's perceived to occur simultaneously i.e. contemporaneously. Although it's possible for herding to occur during the same period, it's equally intuitive to think of herding as something that happens between periods (Choi and Sias, 2009) i.e. inter-temporally. The data in this study are aggregate annual data on FDI outflows which also indicate this dual possibility: herding during the same year and over time. Even though the FDI investments typically would require a longer time for a decision to be made, it's quite possible that firms that are looking for a foreign direct investment would look to the perceived or actual leader in their field and make an investment mirroring that leader's location decision during the same time period (a year). This would be more pronounced in the easier-to-transfer industries, such as the services industries, but it would also be the case with the resource seeking FDI. The leader would also be the company that has the most information for newly available resource destinations, so for example if a UK coffee manufacturer buys a new plant in Kenya instead of Brazil, this would be quickly perceived as a signal for better investment opportunities among less knowledgeable investors say, from smaller countries. I test for this kind of contemporaneous, reputational herding possibility by adapting the widely used Lakonishok, Shleifer and Vishny (1992) model which measures herding in the context of the difference in investments from an expected value, which in this case is the amount of investments that a leader makes. I adapt the model to test what determines this difference from a set of known FDI factors. Since there is no *a priori* benchmark value on what this difference should be, i.e. positive or negative as in the equity markets (where a positive difference indicates herding in buying and conversely, negative in selling), I consider it in absolute terms: big or small difference from the amount of investment in a country that a leader makes.

In the second case of inter-temporal herding I adapt a model from Choi and Sias (2009). The notion here is that there should be a positive correlation in the investments in the same equity, industry or in this case, FDI destination country. I further adapt the model following Choi and Sias (2009) to test whether an investment momentum is generated for a particular country by increased portfolio equity investments or total foreign direct investments from a country neighbourhood (region) which will herd FDI investors over time.

6.2.1. Herding around a leader (contemporaneous analysis)

The most frequently used herding measure in the literature is the one developed by Lakonishok, Shleifer, and Vishny (1992) which defines the herding measure as herding by money managers who are buying into or selling out of stock i during quarter t (contemporaneously). The measure (H(i)) can be written as:

$$H_i = \left| \frac{B_i}{B_i + S_i} - p_t \right| - AF_i \qquad (6.1)$$

Where: B(i) is the number of money managers who increase their holdings in the stock in the quarter (net buyers), S(i) is the number of money managers who decrease their holdings (net sellers), p(t) is the expected proportion of money managers buying in that quarter relative to the number active, and AF(i) is an adjustment factor. The adjustment factor in their case is to adjust for the possible differences in the number of money investors buying or selling stock i in each quarter.

Herding around a world leader

When the FDI outflows of this chapter are considered, I can define the investors in stock i,t, as the country i investing in country j at time t. In this case a proxy for the expected amount of investment i.e. the expected buyers of stock i,t can be proxied by the amount of

investment made to country j by the world leader (which in this study is set to be USA as the largest direct investor in the world) and as a proportion of the country's GDP so that the two can be comparable. I do not include an adjustment factor; the data are aggregate country level data and the data don't include the individual number of firms that have invested in a particular country, just their total value of investments. These investments are expressed as part of the country's GDP so that the values are comparable among countries. Therefore, the equation above is transformed into:

$$H_{i,j,t} = \left| \frac{FDI_{i,j,t}}{GDP_{i,t}} - \frac{FDI_{USA,j,t}}{GDP_{USA,t}} \right| \qquad (6.2)$$

The introduction of a world leader is also consistent with the reputational theory as a possible reason for herding in equity markets. This measure should be considered in terms of greater and smaller value of the herding measure. This is not a formal measurement of herding but rather an indication of the degree of herding (less or more) with respect to the sets of factors that influence FDI flows. These factors have an expected influence (sign) on FDI flows (as discussed and analysed in the previous chapters) and the aim of this analysis is to detect how they influence this herding measure as defined in equation 6.2. An increase in the dependent variable (a positive effect of the independent variable on the dependent variable) indicates less herding (the difference in equation (6.2.) grows). Conversely a decrease in the dependent variable indicates more herding (the difference in equation (6.2.) lowers). Therefore, the null and alternative hypotheses with respect to the different independent variables would be formulated as:

- *For GDP:*

H_0: There is less herding when the GDP of the sending or receiving countries increases;

H_1: There is more herding when the GDP of the sending or receiving countries decreases;

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- *For Openness:*

H_0: There is less herding when the OPENNESS of the sending or receiving countries increases;

H_1: There is more herding when the OPENNESS of the sending or receiving countries decreases;

- *For physical distance:*

H_0: There is less herding when the DISTANCE between country i and j decreases;

H_1: There is more herding when the DISTANCE between country i and j increases;

-*For shared continent and border:*

H_0: There is less herding when country i and j share a CONTINENT or BORDER;

H_1: There is more herding when country i and j don't share a CONTINENT or BORDER;

-*For institutional proximity:*

H_0: There is less herding when country i and j share membership to the same ECONOMIC or POLITICAL ORGANISATION or share the same origin of the LEGAL SYSTEM;

H_1: There is more herding when country i and j don't share membership to the same ECONOMIC or POLITICAL ORGANISATION or share the same origin of the LEGAL SYSTEM;

-*For cultural proximity:*

H_0: There is less herding when country i and j share a LANGUAGE or HISTORY;

H_1: There is more herding when country i and j don't share a LANGUAGE or HISTORY;

-*For cultural distance index:*

H_0: There is less herding when country i and j are more CULTURALLY PROXIMATE;

H_1: There is more herding when country i and j are less CULTURALLY PROXIMATE;

I expect there to be a greater difference (less herding) when the firms make their decisions to invest in j based on other criteria such (macroeconomic, familiarity factors)

whereas when this difference is smaller I expect that country i decided to follow the world leader into country j because it doesn't have the familiarity factors in order to invest in j. In other words, investors from country i might wait until the world leader (USA) invests in country j and consider this to be a positive signal for the investment potential of country j and choose to invest in j themselves. In order to be able to test this premise we must consider several control factors (macroeconomic, physical, institutional and cultural distance) between the two countries i and j at time t. As noted above, time wise herding can be considered in two ways: contemporaneously if the data allow for this and inter-temporally (between periods). In this case I consider the distance from a world leader to occur contemporaneously i.e. within the same year.

$|\text{FDI outflows}_{i,j,t} / \text{GDP}_{i,t} - \text{FDI outflows}_{USA, j,t} / \text{GDP}_{usa,t}| = \beta_0 +$

$\beta_{11} \log (GDPrec) + \beta_{12} \log (GDPsend) + \beta_{13} \log (Openness\ rec) + \beta_{14} \log (Openness\ send) +$

$\beta_{21} \log (DIST_{i,j}) + \beta_{22} SAMECONT + \beta_{23} BORDER +$

$\beta_{31} ECONORGD + \beta_{32} LEGALOR +$

$\beta_{43} SAMEHIST + \beta_{44} COMLANG + \beta_{45} CDindex + \varepsilon_{i,j,t}$ (6.3)

Where:

FDI outflows are direct investment flows from the FDI outflows sending country i (OECD member towards an FDI receiving country j (any country of the world) at time t minus the FDI outflows of the perceived world leader, at time t. The dependent variables are: a set of variables captures the main economic characteristics of the target country that one would expect to influence the investors. I use the GDP (GDPsend and GDPrec) for the both countries in the FDI bilateral relationship which is the first indicator of economic attraction for making and receiving investments. The country openness to trade has been noted to have a

stimulating influence on the FDI flows to that country and I represent this influence with the country's exports plus import as a percent of GDP of the FDI outflows receiving and sending country.

This group of variables is followed by proxies for the physical proximity impact on FDI outflows. Distance measures the direct distance between the two countries in the country pair and has an expected negative influence on FDI outflows. The second proxy is a dummy variable that takes a value of one if the countries in the pair share a border. This is a variable that will show that if herding occurs whether it occurs especially in cross-border direct investments or it's just general proximity that is more important for FDI flows.

Finally, I include a set of institutional and cultural control variables to check for the influence of social and cultural proximity in addition to the effects of past FDI flows and portfolio equity investments and in a setting of varying levels distance and geographic areas. The four variables are: shared economic and political organisation, shared origin of the legal systems in the country pair, shared history and shared official or minority language between the two countries in the country pair. Together these four variables capture various aspects of cultural, social and political similarities between countries that are shown to have an effect on investors. The Hausman test below shows that fixed effects should be used. The Hausman test was previously discussed in greater detail in section 4.6.2.

Table 6.1: Hausman Test for the econometric panel estimation in chapter 6

Ho: there is no misspecification in the RE model
H1: there is misspecification in the RE model, use FE

Correlated Random Effects - Hausman Test
Equation: HAUSMANTEST

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Period random	126.770973	11	0.0000

Reject H_0

By examining the herding measure as a distance in the amount invested per capita from a perceived world leader, the question of this relation in terms of a regional leader arises naturally. In this sample, there is the possibility to analyse regions in the context of continents: Europe, Asia-Pacific and the Americas. Due to a very small number of observations in the case of FDI outflows from the American continent (82 observations) I am unable to estimate this model. The same analysis as in the previous model is repeated except in this case the sample is limited to FDI outflows countries located on the same continent. Therefore, the model for this section is written in the same way as in the previous analysis as specified in equation 6.3., except in this case the sample is limited to FDI sending countries located on the European continent in the first case and in the Asia-Pacific region in the second case. The distance in investment is measured as distance from the UK and Japan for the European and Asia-Pacific region, respectively. The rest of the variables for this analysis are the same as previously specified.

6.2.2. Herding in FDI (Inter-temporal analysis)

The herding in the equity markets is most frequently measured as a deviation from the expected market values. The herding measure most commonly used is these studies is the one developed by Lakonishok, Shleifer, and Vishny (1992) defined as a statistic that measures the average tendency of money managers to buy and sell a particular stock at a particular time. Another approach to considering herding would be to adopt a more institutional measure and consider the number of countries investing in a particular destination during the same time period as well as across time periods. The herding among institutional investors (Choi and Sias, 2009) is defined as the correlation between institutional investors' demand this period and last. This can be written as:

$$\Delta_{k,t} \; = \; \sum_{n=1}^{N_{k,t}} \frac{D_{n,k,t}}{N_{k,t}} \tag{6.4}$$

Where, $D_{k,t}$ is a dummy variable that's equal to 1 if the institutional investor n increases his position in industry k in quarter t; $N_{k,t}$ is the number of institutions trading in industry k at quarter t.

Or in an expanded form:

$\Delta k;t =$ #Institutional buyers of industry k in quarter t

(#Institutional buyers of industry k in quarter t + #Institutional sellers of industry k in quarter t)

$$\tag{6.5}$$

The herding measure then is expressed as the correlation between $\Delta_{k,t}$ and $\Delta_{k,t-1}$.

In the FDI context of this study, the same notion can be expressed by replacing the institutional investors with foreign direct investors from country i to country j at time t. Then the measure of $\Delta_{k,t}$ from above becomes the number of country i's that have invested in country j's at time t divided by the total number of country i that can invest in j, which is the total number of OECD countries in the sample (a maximum number of 30).

When equation 6.4 is adapted, it can be written as:

$$\Delta_{i,t} \; = \; \sum_{n=1}^{N_{i,t}} \frac{D_{i,j,t}}{N_{i,t}} \tag{6.6}$$

Where $D_{i,j,t}$ is the number of country i (FDI outflows sending countries) that have invested in country j (FDI outflows receiving country); $N_{i,t}$ is the total possible number of countries i (sending countries) that could have invested in j (30 OECD countries and 170 possible j

countries in any of the years in this sample period of 1981-2005). From there, following Choi and Sias (2009) and Sias (2004) I can say that there is herding in FDI if there is strong, positive correlation between the ratio of the number of countries that have invested in j at time t and the number of countries that invested in j at time t-1 and the total number of countries that could have invested in j in the given time periods or:

$$\rho\,(\Delta_{i,t,}\,\Delta_{i,t-1}) \qquad\qquad (6.7)$$

Sias and Choi (2009) also use the lags of the institutional demand and returns to test whether the momentum they generate explains why institutional investors herd. They estimate the following regression:

$$\Delta_{k,t} = \beta_{1,t}*\Delta_{k,t-1} +\ \beta_{1,t} * R_{k,t-1} + \varepsilon_{k,t} \qquad\qquad (6.8)$$

Where $\Delta_{k,t}$ is the institutional demand as defined in the previous section; $\Delta_{k,t-1}$ is the institutional demand lag and $R_{k,t-1}$ is the industry returns lag in the quarterly regressions.
Adapting from this framework, I am testing to see whether an increase (or investment momentum) in portfolio equity flows in the FDI receiving country will incite FDI investments in that market. I'm also testing to see whether a general momentum that's created by the total regional amount of FDI flows to a receiving country influences FDI investors to also invest in that market. I test this in the general model, using the control.

Portfolio investors herd FDI investors

A market that is perceived as attractive for making portfolio investments may encourage direct investors to follow suit. Therefore the past and present equity portfolio flows attract FDI flows to the host market given the other control factors that I've used before. This econometric specification is written as the following:

FDI outflows $_{i,j,t}$ = β_0 +

B1$_1$ (PEI $_{j,t}$) + β_{12} (PEI $_{j,t-1}$) + β_{13} (PEI $_{j,t-2}$)

β_{21} log (GDPrec) + β_{22} log (GDPsend) + β_{23} log (Openness rec) + β_{24} log (Openness send) +

β_{31} log (DIST $_{i,j}$) + β_{32} SAMECONT + β_{33} BORDER +

β_{41} ECONORGD + β_{42} LEGALOR +

β_{43} SAMEHIST + β_{44} COMLANG + β_{45} CDindex + $\varepsilon_{i,j,t}$ (6.9)

Where PEI $_{i,j,t,}$, PEI $_{j,t-1, and}$ PEI $_{j,t-2}$ denotes the Portfolio Equity Investment (as described in the data section) for three periods, t, t-1 or t-2 for the FDI outflows receiving country j.

Herding around the total regional FDI

This analysis uses bilateral country pairs that are on the same continent. A new variable is constructed that denotes the amount of investments from one continent to a particular country but without the amount of FDI outflows from the sending country is being considered at the moment. So, if we're considering Austria's outflows to Slovenia at time t, the newly constructed variable would show the total amount of FDI outflows from all investing countries on the European continent in Slovenia at time t but without the FDI outflow of Austria to Slovenia in that year. This is done so that we can see whether countries from the same region (continent) follow each other's lead in investing in the region. The econometric specification is written as follows:

FDI outflows $_{i,j,t}$ = β_0 +

B1$_1$ (FDI $\sum$region-i, j,t) + β_{12} (FDI $\sum$region-i, j,t-1) +

β_{21} log (GDPrec) + β_{22} log (GDPsend) + β_{23} log (Openness rec) + β_{24} log (Openness send) +

$\beta_{31} \log (DIST_{i,j}) + \beta_{32} SAMECONT + \beta_{33} BORDER +$

$\beta_{41} ECONORGD + \beta_{42} LEGALOR +$

$\beta_{43} SAMEHIST + \beta_{44} COMLANG + \beta_{45} CDindex + \varepsilon_{i,j,t}$ \hfill (6.10)

Where FDI $\sum$ region -i, j,t, or FDI $\sum$ region -i, j,t-1 denotes the total FDI outflows from Europe to country j less the FDI outflow of country i at time t and time t-1. The rest of the variables are as described in the data chapter (3).

6.3. *Herding in FDI outflows results*

The following section presents the results of the herding in FDI outflows analysis. It begins with a discussion on the contemporaneous herding analysis and continues with the inter-temporal analysis. The results for this chapter's empirical analysis can be found in tables 6.2 through to 6.6.

6.3.1. *Herding around a world leader*

This section presents the results for the herding in FDI outflows represented through the absolute difference in the level of FDI outflows of the sending country i and the US as a world leader. They can be found in table 6.2. When the difference in the level of investment to the US (or when the herding measure or the dependent variable in this analysis) is greater, then this indicates less herding and *vice versa*.

With this interpretation in mind, *the GDP* of the sending country has a negative and significant sign indicating increasing herding from the FDI sending countries with higher GDP. The GDP of the receiving country is positive and significant indicating less herding as the FDI receiving country is richer. This could be interpreted in the context of one of the

explanations for herding in the literature: following the more informed investors. The richer the receiving country, the more likely it is that there will be more available investment information and greater institutional familiarity.

The openness indicator of the FDI outflows sending country is negative indicating more herding when the sending country is more open. The openness of the receiving country is positive and significant indicating that there is less herding. This implies that there would be more herding in the case of investing in less open countries.

In terms of physical proximity, results show that the *physical distance and continent* are negative and significant indicating that there is more herding when the countries are further apart and when they're not on the same continent.

From the results in table 6.2, we can see that from the institutional proximity variables, the *shared legal system origin* is significant and positive indicating less herding when the countries are more institutionally familiar. This is consistent with the findings in the previous chapters that the countries prefer to invest in places that are more institutionally familiar. The same finding is applied to the following variables of *institutional and cultural familiarity*. They are all positive and significant indicating less herding when the countries have these factors in common. The *cultural distance index* is negative and significant indicating less herding when the cultural distance between the countries is smaller.

These results show that OECD member countries prefer to invest in familiar places however when it comes to investment in otherwise unfamiliar places, then they would choose to follow the investment destinations of the US.

6.3.2. Herding around a regional leader

This section presents the results which can be found in table 6.3, for the herding in FDI outflows represented as following one of the two regional leaders: UK and Japan which represent regional leaders for Europe and Asia-Pacific, respectively. I expect the same

Table 6.2. Herding around a world leader (US);

Dependent variable is |FDIoutflows i,j,t / GDPsend - FDIoutflowsusa,j,t / GDPusa | which is the absolute value of the foreign direct investment outflow from country i to country j at time t, divided by country i's GDP minus the FDI outflows of the US to country j at time t divided by US's GDP; The FDI flows are from the FDI sending country towards the FDI receiving. The explanatory variables are: Log of the GDP of the FDI receiving country; log of the GDP for the FDI sending country; trade openness (ratio of exports plus imports over GDP) for the FDI receiving country; trade openness (ratio of exports plus imports over GDP) for the FDI sending country; the log of the physical distance between the country i and j in kilometres; shared border dummy (value of one if country i and j share a border); shared economic or political organisation dummy (value of one if country i and j share membership in the same economic or political organisation); same legal origin dummy (one if country i and j share the same origin of their legal systems); shared language (one if country i and j share the same official language or language of the minorities); shared history (one if country i and j share history with respect to having had a past colonial relationship or having been part of the same country) and the cultural distance index based on Kogut and Singh (1988). The t-statistics are based on standard errors that have been adjusted for cross-sectional heteroskedasticity using the White (1980) method; Fixed effects used; Note that *, **, *** stand for significant coefficients at the 10%, 5% and 1% level respectively; **The coefficients have been multiplied by 10^5**.

	$|FDI\ outflows_{i,j,t} / GDP_{send} - FDI\ outflows_{usa,j,t} / GDP_{usa}|$	
C	8.66	***
L GDP SEND	-1.18	***
L GDP REC	0.10	***
openness REC	0.06	***
Openness SEND	-1.03	***
L Distance	-0.44	***
Continent dummy	-0.23	**
BORDER	-0.09	NA
Ec. Organisation	0.10	***
Legal origin	0.08	***
Language	0.10	*
History	0.25	***
CD index	-0.07	***
Adj.R^2	0.31	
Observations (N)	7,503	

findings as in the previous analysis: more herding when there is less common factors between the country pairs. The dependent variable here represents the absolute difference in the amount invested (divided by GDP) GDP with respect to the regional leader's investment in the same country j.

European Leader – United Kingdom

In the case of the UK, the same results for the macroeconomic variables can be found, as with the world leader analysis. There is less herding as *the GDP* of the receiving country grows indicating that in the case of big markets, there is less herding because firms will try to invest in bigger markets regardless of the familiarity levels i.e. if the market is big enough they will go seek to acquire the necessary information. The sending country's GDP has a negative sign, indicating that there is more herding among the sending countries with higher GDP. Even though there is no particular theoretical expectation that this should be so one explanation for this could be the nature of the sample. In this case the FDI sending country is an OECD member and the countries that have provided more data are also the ones with a higher GDP which in this case appears as they are herding more than the rest.

Of the two country openness indicators the *trade openness* of the sending country is negative and significant indicating more herding for more open sending countries, a result that is consistent with the GDP of the sending country.

Of the physical proximity indicators, all three variables in this group are negative and significant indicating more herding when there is *greater physical distance* between countries, more herding when the countries are on a different *continen*t and when they don't share a *border*. This is to be expected as typically, companies are less familiar with faraway investment opportunities and would choose to follow the 'more knowledgeable' investors from the region, in this case – the UK.

Table 6.3. Herding around a regional leader (UK or Japan);

Dependent variable is |FDIoutflowsi,j,t / GDPsend - FDIoutflows(reg.leader),j,t / GDP(reg.leader),t| which is the absolute value of the foreign direct investment outflow from country i to country j at time t, divided by country i's GDP minus the FDI outflows of the regional leader (UK or Japan) to country j at time t divided by the regional leader's GDP; Country i is located on the same continent as the regional leader. The FDI flows are from the FDI sending country towards the FDI receiving. The explanatory variables are: Log of the GDP of the FDI receiving country; log of the GDP for the FDI sending country; trade openness (ratio of exports plus imports over GDP) for the FDI receiving country; trade openness (ratio of exports plus imports over GDP) for the FDI sending country; the log of the physical distance between the country i and j in kilometres; shared border dummy (value of one if country i and j share a border); shared economic or political organisation dummy (value of one if country i and j share membership in the same economic or political organisation); same legal origin dummy (one if country i and j share the same origin of their legal systems); shared language (one if country i and j share the same official language or language of the minorities); shared history (one if country i and j share history with respect to having had a past colonial relationship or having been part of the same country) and the cultural distance index based on Kogut and Singh (1988). The t-statistics are based on standard errors that have been adjusted for cross-sectional heteroskedasticity using the White (1980) method; Fixed effects used; Note that *, **, *** stand for significant coefficients at the 10%, 5% and 1% level respectively; **The coefficients have been multiplied by 10^5**.

	$\|FDI\ outflows_{i,j,t} / GDP_{send} - FDI\ outflows_{uk,j,t} / GDPuk\|$		$\|FDIoutflowsi,j,t/GDPsend - FDIoutflowsjpn,j,t/GDPjpn\|$	
C	6.35	***	17.80	***
L GDP REC	0.05	**	0.21	***
L GDP SEND	-0.75	***	-2.99	***
openness REC	0.04	*	0.15	**
Openness SEND	-2.47	***	2.76	***
L Distance	-0.35	***	-0.67	***
Continent dummy	-0.14	***	0.02	
BORDER	-0.23	***	NA	
Ec. Organisation	0.14	***	0.32	***
Legal origin	0.09	***	0.21	**
Language	0.07		0.19	
History	0.32	***	0.15	**
CD index	-0.06	***	-0.12	***
#N	7,827		737	
Adj.R^2	0.26		0.59	

The five variables for the institutional and cultural familiarity between the country pairs are positive and significant except in the case of the *shared language and the cultural distance index* which is expected to be negative. There is less herding when the country pair countries share: *the same economic or political organisation*; *share the same origin of the legal system and the same history*, while as the *cultural distance* between two nations grows, there would be more herding. These results indicate that when the countries have greater institutional and cultural familiarity they tend to herd less or put in other words, when the company isn't familiar with an investment destination, it will choose to follow the regional leader – the UK.

Asia-Pacific Leader – Japan

In the case of Asia-Pacific, I find the same overall results as in the case of Europe. The *GDP* of the receiving country is positive while the one for the FDI sending country is negative indicating the same results as above, less herding when the GDP of the receiving country is greater while there is more herding among the richer sending countries in the Asian-Pacific region. Both of the *country openness* indicators are positive which, shows less herding with greater country openness. Greater *physical distance* increases herding in the Asian-Pacific region. There is less herding when the countries share institutional familiarity: the *same economic or political organisation membership and same origin of the legal system*. The *cultural distance index* also suggests less herding when the cultural distance between two nations is greater and less herding when the two countries share the same history.

Overall, I find that companies would take investment cues from the regional leader, UK or Japan when they don't have any economic, proximity, institutional or cultural familiarity factors to guide their way in choosing an investment destination.

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Table 6.3. Herding around a regional leader (UK or Japan);

Dependent variable is |FDIoutflowsi,j,t / GDPsend - FDIoutflows(reg.leader),j,t / GDP(reg.leader),t| which is the absolute value of the foreign direct investment outflow from country i to country j at time t, divided by country i's GDP minus the FDI outflows of the regional leader (UK or Japan) to country j at time t divided by the regional leader's GDP; Country i is located on the same continent as the regional leader. The FDI flows are from the FDI sending country towards the FDI receiving. The explanatory variables are: Log of the GDP of the FDI receiving country; log of the GDP for the FDI sending country; trade openness (ratio of exports plus imports over GDP) for the FDI receiving country; trade openness (ratio of exports plus imports over GDP) for the FDI sending country; the log of the physical distance between the country i and j in kilometres; shared border dummy (value of one if country i and j share a border); shared economic or political organisation dummy (value of one if country i and j share membership in the same economic or political organisation); same legal origin dummy (one if country i and j share the same origin of their legal systems); shared language (one if country i and j share the same official language or language of the minorities); shared history (one if country i and j share history with respect to having had a past colonial relationship or having been part of the same country) and the cultural distance index based on Kogut and Singh (1988). The t-statistics are based on standard errors that have been adjusted for cross-sectional heteroskedasticity using the White (1980) method; Fixed effects used; Note that *, **, *** stand for significant coefficients at the 10%, 5% and 1% level respectively; **The coefficients have been multiplied by 10^5**

	$\lvert FDI\ outflows_{i,j,t} / GDP_{send} - FDI\ outflows_{uk,j,t} / GDPuk \rvert$		$\lvert FDIoutflowsi,j,t/GDPsend - FDIoutflowsjpn,j,t/GDPjpn \rvert$	
C	6.35	***	17.80	***
L GDP REC	0.05	**	0.21	***
L GDP SEND	-0.75	***	-2.99	***
openness REC	0.04	*	0.15	**
Openness SEND	-2.47	***	2.76	***
L Distance	-0.35	***	-0.67	***
Continent dummy	-0.14	***	0.02	
BORDER	-0.23	***	NA	
Ec. Organisation	0.14	***	0.32	***
Legal origin	0.09	***	0.21	**
Language	0.07		0.19	
History	0.32	***	0.15	**
CD index	-0.06	***	-0.12	***
#N	7,827		737	
Adj.R^2	0.26		0.59	

6.3.3. Inter-temporal analysis of herding in FDI flows

This section discusses the results of the inter-temporal approach to considering herding that was estimated following Sias and Choi (2009). The results of the correlation as described in equation 6.6 and 6.7 are presented are presented below in table 6.4.

Table 6.4. Inter-temporal correlation in FDI outflows

CONTINENT OF THE RECEIVING COUNTRY	CORRELATION $\rho\,(\Delta_{I,T}, \Delta_{I,T-1})$	NUMBER OF OBSERVATIONS
All countries (j)	95%	2,616
EUROPE (as receiving continent)	92%	750
Asia (as receiving continent)	94%	632
Africa (as receiving continent)	91%	616
Americas (as receiving continent)	95%	531
Pacific (as receiving continent)	92%	87

The table (6.4) shows the correlations results for the whole panel dataset and separately for countries that are receiving the FDI outflows and are located on any of the five continents. We can see that there is a very high overall correlation between the number of countries that have invested in county j at time t and the number of countries that have invested in country j at time t-1.

6.3.4. Portfolio investors are herding direct investors

This table (6.5) presents the results when portfolio investors are herding direct investors. Portfolio equity investors generate momentum in a country market which is expected to stimulate FDI flows to that country. When direct investors see the increased activity in the equity market of the receiving country they will be stimulated to invest there.

Table 6.5 shows four regressions with different combinations of lags of portfolio equity investments in the receiving country. The expectation is that the *portfolio equity flows* will be significant in explaining the FDI flows to the receiving country. It is expected that the PEI will generate investment momentum in the market which will in turn incite and encourage FDI investors. This is because intuition tells us that an increased activity in the equity markets signals that such a market is a better investment option compared to a market that doesn't have an increase in the equity markets investments. Due to data availability I am only able to include the PEI at time t, t-1 and t-2. The results show that the PEI in the FDI receiving country are significant at the second lag (t-2) with the others being insignificant. This indicates that it would take at least 2 years after the local market has had an increased PEI activity for the direct investors to perceive it as an attractive investment destination. This finding points to a need for further lags to be examined in a dataset that would allow for that.

The rest of the variables (in the main analysis with three time periods) have the expected signs consistent with the previous findings. *The GDP* of the sending country as well as the *openness to trade* for both the sending and receiving countries have a positive and stimulating effect on the FDI outflows when portfolio equity flows are also considered in the receiving country. The main puzzling finding in this analysis is the sign on *the distance* and *continent* variables which should have negative and positive signs respectively but in this analysis the opposite can be observed. In the data chapter (3) I noted that the correlation between these two variables can be considered high (81%) and it is very likely that in this particular analysis this is the reason for the observed inconsistency in the results of these two variables. From the rest of the variables, the *shared border and shared economic and political organisation* aren't significant. The *shared legal origin variable* is positive and significant for FDI flows once the PEI in the receiving country are considered.

Table 6.5. Portfolio investors herd direct investors;

Dependant variable is log (FDI outflows $_{i,j,t}$) which equals foreign direct investment inflow to country i from country j at time t; The FDI flows are from the FDI sending country towards the FDI receiving. The explanatory variables are: Portfolio Equity Investments (PEI) in the FDI receiving country at time t, t-1 or t-2; Log of the GDP of the FDI receiving country; log of the GDP for the FDI sending country; trade openness (ratio of exports plus imports over GDP) for the FDI receiving country; trade openness (ratio of exports plus imports over GDP) for the FDI sending country; the log of the physical distance between the country i and j in kilometres; shared border dummy (value of one if country i and j share a border); shared economic or political organisation dummy (value of one if country i and j share membership in the same economic or political organisation); same legal origin dummy (one if country i and j share the same origin of their legal systems); shared language (one if country i and j share the same official language or language of the minorities); shared history (one if country i and j share history with respect to having had a past colonial relationship or having been part of the same country) and the cultural distance index based on Kogut and Singh (1988). The t-statistics are based on standard errors that have been adjusted for cross-sectional heteroskedasticity using the White (1980) method; Fixed effects used; Note that *, **, *** stand for significant coefficients at the 10%, 5% and 1% level respectively;

	PEI t		PEI t -1		PEI t-2		PEI t;t-1;t-2	
C	-5.22	***	-5.14	***	-5.07	***	-5.02	***
L PEI rec, t	000						0.00	
L PEI rec, t-1			0.01	*			0.00	
L PEI rec, t-2					0.01	**	0.01	**
L GDP REC	0.71	***	0.72	***	0.72	***	0.01	*
L GDP SEND	0.73	***	0.73	***	0.73	***	0.72	***
Openness REC	0.32	***	0.31	***	0.30	***	0.72	***
Openness SEND	2.62	***	2.61	***	2.60	***	0.29	***
L Distance	-0.53	***	-0.54	***	-0.57	***	2.61	***
Continent dummy	0.03		0.02		0.01		-0.57	***
BORDER	0.00		0.00		-0.01		0.01	
Ec. Organisation	0.16	***	0.16	***	0.13	***	-0.01	
Legal origin	0.12	***	0.13	***	0.14	***	0.13	***
Language	0.32	***	0.31	***	0.30	***	0.13	***
History	0.35	***	0.35	***	0.35	***	0.29	***
CD index	-0.04	***	-0.04	***	-0.04	***	0.34	***
Adj.R^2	0.48		0.48		0.48		0.48	
Observations (N)	9,030		8,219		8,219		7,692	

In the cultural proximity group, the *shared history and shared language* variables are both positive and significant indicating greater FDI outflows among culturally proximate countries when the PEI are also considered. The positive sign for the *cultural distance index* is contrary to the expectation in this regression.

This analysis shows that portfolio equity investments in one country have a stimulating effect on FDI investments with a lag of at least two years for this to take effect. The portfolio activity generates a certain momentum of future direct investments but due to data restrictions we cannot see results of more time lags.

6.3.5. Total regional FDIs herd other investors

The results in table 6.6 show whether an increase in the total amount of regional (European) investments to country j will attract further investments from country i into country j. The aim here is to detect whether firms follow the investment inclinations of the neighbourhood (region). The dataset only allows for the European investments to country j only at time t and t-1 to be estimated. The same data constrains prevent me from performing the same analysis for the other two regions: Asia-Pacific and America, as they have a much smaller overall number of observations than Europe. Therefore the regional analysis for this particular context will be limited to the European region.

If we focus only on the newly added variable, *the total regional FDI investments to country j*, the results show that the investments are significant only at time t with the first lag being insignificant. This finding indicates that these results aren't very consistent. The rest of the variables which are part of the model are expected to have signs as in the previous analyses in chapters 4 and 5. The *physical distance* has a negative effect on FDI outflows in the European region. The *shared legal origin* does have a positive effect on the FDI outflows among European countries as does the *shared language* indicating that cultural and

Table 6.6. Total Regional (European) direct investments herd other investors;

Dependant variable is log (FDI outflows $_{i,j,t}$) which equals foreign direct investment inflow to country i from country j at time t; The FDI flows are from the FDI sending country towards the FDI receiving. The explanatory variables are: Total European FDI outflows to country j at time t, t-1 or t-2; The country i is excluded from the European total because that value is represented on the dependant variable side; Log of the GDP of the FDI receiving country; log of the GDP for the FDI sending country; trade openness (ratio of exports plus imports over GDP) for the FDI receiving country; trade openness (ratio of exports plus imports over GDP) for the FDI sending country; the log of the physical distance between the country i and j in kilometres; shared border dummy (value of one if country i and j share a border); shared economic or political organisation dummy (value of one if country i and j share membership in the same economic or political organisation); same legal origin dummy (one if country i and j share the same origin of their legal systems); shared language (one if country i and j share the same official language or language of the minorities); shared history (one if country i and j share history with respect to having had a past colonial relationship or having been part of the same country) and the cultural distance index based on Kogut and Singh (1988). The t-statistics are based on standard errors that have been adjusted for cross-sectional heteroskedasticity using the White (1980) method; Fixed effects used; Note that *, **, *** stand for significant coefficients at the 10%, 5% and 1% level respectively;

	EUR j, t-1		EUR j, t-1		EUR j, t, t-1	
C	-1.71	***	-4.79	***	-6.38	***
LOG EUR to j, t	0.01				0.02	***
LOG EUR to j, t-1			0.00		0.00	
L GDP REC	0.04		0.43	***	0.58	***
L GDP SEND	0.83	***	0.78	***	1.05	***
Openness REC	0.46	***	0.40	***	0.70	***
Openness SEND	4.86	***	5.82	***	5.23	***
L Distance	-0.98	***	-0.62	***	-0.99	***
Border	-0.19	***	0.18		-0.32	***
Ec. Organisation	NA	***	0.19	*	-1.32	***
Legal origin	0.27		0.09		0.34	***
Language	0.00	***	0.83	***	0.86	***
History	0.24	***	0.25		0.16	
CD index	-0.05	***	0.02		0.05	***
Adj.R^2	0.45		0.57		0.62	
Observations (N)	953		728		198	

institutional familiarity still plays a role in FDI outflows despite the fact that there is an increased investing from the neighbourhood. The greater the *GDP* of the sending and receiving country the greater the FDI outflows among the European countries and similarly, the greater the *trade openness* the greater the FDI outflows among European countries.

There are some unexpected signs in the same variables: *the cultural distance index* has a positive sign: The *shared border* also has a negative sign conversely to the expectation however this result is probably due to the fact that this analysis considers only European countries. The *economic organisation dummy* has a negative sign which is also not expected and indicates that more FDI flows happen between European countries that don't have this trait in common, contrary to the previous findings. However, this small sample analysis considers only the European countries which is probably why this finding might be observed. Another inconsistency is the positive sign for the cultural distance index in the last regression which is expected to have a negative influence on the European FDI flows.

These results appear to indicate that FDI flows are increasing simultaneously as the total sum of the investments from the regional neighbourhood, judging by the last estimation in table 6.6. However, this analysis must be taken with caution because the results aren't very robust and due to lack of data to test with other time period lags.

6.4. *Conclusion*

I test for herding in the context of the difference in investment amount from world and regional leaders and through the influence of the PEI and total regional investments in different time periods. I find supporting evidence for herding in FDI outflows at an aggregate and regional level.

First, I find that the herding is secondary to the familiarity factors and occurs in the cases when companies do not have the institutional and cultural proximity to another country. The

difference in the amount invested from a world or a regional leader falls when companies don't have other factors of economic activity or familiarity. In such cases they follow the investment pattern of the world leader, the US or the regional leaders, the UK and Japan. This finding is consistent also with the home country bias findings.

Next I find that FDI investors are, prone to choose an investment location with a high portfolio equity investment activity at least after two years. That means that it takes two years for direct investment to be generated from an increased activity in the equity markets. Finally I find inconclusive evidence that suggests that increased FDI investments from the neighbourhood into one country will encourage the country to also choose that country as an FDI destination.

Overall, I can conclude that when it comes to unfamiliar territory, companies aren't discouraged to invest but rather choose the investments made by a world or a regional leader as a signal for an investment destination. This finding also suggests that the effects of herding in FDI are secondary to the effects of near-home bias which guides investments according to several familiarity factors.

Given the fact that FDIs are of benefit to any economy and that many of the developing countries are actively seeking to attract them it would be prudent to estimate which factors increase the probability of having FDI flows and by how much so that countries would be able to tailor their policies in order to attract more FDI flows. This question is further examined and is the focus of the study in the next chapter (7).

7. Probability of Attracting FDI Flows

7.1. *Introduction*

While there might not be a lot that can be done in a short time frame in terms of changing a country's macroeconomic environment (GDP, trade openness) and its geographical proximity to potential direct investors is fairly permanent, the institutional and cultural factors are something that can be changed or addressed in order to make the country more attractive for FDIs. Institutional alignment and change is something that is already a reality among the EU member countries however those countries make up for approximately 15% of the total number of countries in the world. For smaller, developing or emerging countries FDI inflows are often considered to be a lifeline in the perception of their citizens and consequently they're frequently a favoured political campaign promise. Therefore it is very important to see how certain factors influence the probability of FDI flows considering that countries are always competing to attract more FDI. I find results to support this expectation: greater institutional and cultural proximity increase the probability of FDI outflows and inflows and this finding is the case at a global, regional and country level.

The purpose of this chapter is to estimate the probability of FDI flows occurring between two countries using the FDI groups of factors established in Chapter 4. Positive FDI flows are denoted as net decreases in assets (FDI outflows) and net increases in liabilities (FDI inflows) and are recorded as credits in the balance of payments. By considering both the positive values and the non-relationship (zero FDI) values it would examined whether the probability of a direct investment occurring indeed increases among countries that are more proximate and countries that have more in common and the effect that these determinants have on this probability could be quantified. This can be estimated using a probabilistic (binary dependent variable) type of model. I use probit to estimate the probability of an FDI relationship

between two countries going from zero to a positive investment and the effect of the determinants on this probability.

Using a binary dependant variable method set to be zero if there isn't an FDI relationship between country i and j and 1 if there is a positive relationship will show how the aforementioned factors increase or decrease the probability of an FDI relationship between two countries occurring. I estimate the marginal effect that each independent variable has on this probability of having an FDI relationship between two countries. The basic descriptive statistics for the analysis in this chapter, previously discussed in chapter 3, can be found in tables 3.7a;b and 3.10a;b.

7.2. Model

I analyse four groups of factors that influence the probability of having an FDI relationship using a probit regression analysis in the context of the probability of having a general FDI flows relationship between two countries in a country pair in order to identify which factors help in having above average FDI flows. This is important since most countries strive to attract more FDI flows in their economies as this has generally beneficial effects for the overall economy.

For the purpose of this analysis I consider positive FDI inflows or outflows and data on no-FDI relationship (zero FDI). The main descriptive statistics for this analysis are presented in tables 3.7a;b and 3.11a;b and were discussed in the data sections (in chapter 3). The number of observations for the analyses in this chapter have increased to 22,989 observations with 2,872 unique bilateral pairs for FDI outflows and 25,390 and 3,066 unique country pairs for FDI inflows, because of the addition of the zero FDI observations.

The linear probability response models (logit, probit, etc.) are techniques for analysing the relationship between fixed level independent variables and a dependent variable that's constrained to vary between 0 and 1. Below I discuss the econometric representation of a probit model following Gujarati (2004, ch.15).

Using OLS for econometric estimations when the dependent variable is a dummy variable (a qualitative variable) presents a number of problems such as: non-normality of the errors ($u_{i,j,t}$); heteroskedastic variances of the errors; questionable value of the R^2 as a measure of the goodness of fit and non-fulfilment of the conditional probability that the event occurring in the dependent variable given the independent variables will move between 0 and 1. The probabilistic models (like logit and probit) will guarantee that the estimated probabilities of the dependent variable will lie within the 0-1 limits. Therefore, one would need a (probability) model that has these two crucial features: as the independent variables ($X_{i,j,t}$) increase, the conditional probability that the event in dependent variable will occur given the independent variables [$Pi = E(Y = 1 \mid X)$] increases but never steps outside the 0–1 interval, and that the relationship between Pi and $X_{i,j,t}$ is nonlinear, that is, it approaches zero at slower and slower rates as ($X_{i,j,t}$) gets small and approaches one at slower and slower rates as ($X_{i,j,t}$) gets very large. The two most commonly used conditional probability models are logit (uses a cumulative logistic function) and probit (uses a normal cumulative distribution function and is sometimes also known as normit).

Both logit and probit methods would give similar results. The finer point differences between the two techniques are beyond the scope of this thesis. In the FDI literature studies use both logit and probit but the probit is has been used slightly more frequently in more recent studies. Therefore, I also use it for this study.

This chapter uses a dependent variable that represents a decision of country i to invest in country j at time t. This decision depends on an unobservable utility index $U_{i,j,t}$ (or a latent variable, or a threshold) that is determined by several explanatory variables $[\sum_{k=1}^{n=4}(\gamma_k^n)]$ in such a way that the greater the value of this $U_{i,j,t}$, the greater the probability of a country i investing in a country j at time t. This can be represented with the following equation:

$$U_{i,j,t} = \beta_0 + \beta_1(\gamma_1) + \beta_2(\gamma_2) + \beta_3(\gamma_3) + \beta_4(\gamma_4) + u_{i,j,t} \qquad (7.1.)$$

Where: [i, j, t, denote FDI flows from county i to j and time, respectively]; γ_1 is for the macroeconomic variables that denote the economic size of the markets and the country openness; γ_2 is for the physical proximity group; γ_3 represents the institutional proximity variable group and the final group is the cultural distance group, γ_4;

The further specified econometric specification of these variables is as follows:

$U_{i,j,t}$ (*outflows*) = β_0 +

$\beta_{11} \log (GDPrec) + \beta_{12} \log (GDPsend) + \beta_{13} \log (Openness\ rec) + \beta_{14} \log (Openness\ send) +$

$\beta_{21} \log (DIST_{i,j}) + \beta_{22} SAMECONT + \beta_{23} BORDER +$

$\beta_{31} ECONORGD + \beta_{32} LEGALOR +$

$\beta_{43} SAMEHIST + \beta_{44} COMLANG + \beta_{45} CDindex \quad + \varepsilon_{i,j,t} \qquad (7.2.a)$

$U_{i,j,t}$ (in*flows*) = β_0 +

$\beta_{11} \log (GDPrec) + \beta_{12} \log (GDPsend) + \beta_{13} \log (Openness\ rec) + \beta_{14} \log (Openness\ send) +$

$\beta_{21} \log (DIST_{i,j}) + \beta_{22} SAMECONT + \beta_{23} BORDER +$

$\beta_{31} ECONORGD + \beta_{32} LEGALOR +$

$\beta_{43} SAMEHIST + \beta_{44} COMLANG + \beta_{45} CDindex \quad + \varepsilon_{i,j,t} \qquad (7.2.b)$

This utility index $U_{i,j,t}$ is related to the actual decision of a country to invest or not invest in country j by way of a critical or threshold level or the index $U_{i,j,t}*$ such that if $U_{i,j,t}$ exceeds this critical value of $U_{i,j,t}*$, there will be an FDI flow from country i to country j at time t. This threshold $U_{i,j,t}*$ is unobservable but it's assumed to be normally distributed with the same mean and variance. Given the assumption of normality, the probability that $U_{i,j,t}*$ is less than or equal to $U_{i,j,t}$ can be computed from the standardized CDF as:

$Pi = P(Y=1|X) = P(U_{i,j,t}* < U_{i,j,t}) = P(Zi < \beta_0 + \beta_1(\gamma_1) + \beta_2(\gamma_2) + \beta_3(\gamma_3) + \beta_4(\gamma_4)) =$

$F(\beta_0 + \beta_1(\gamma_1) + \beta_2(\gamma_2) + \beta_3(\gamma_3) + \beta_4(\gamma_4))$ (7. 3)

Where $P(Y=1|\gamma)$ means the probability that the event specified by the binary dependent variable will occur given the values of the explanatory factors (jointly) denoted by γ. The events in this case are specified as either:

$Y_{i,j,t}$ (for either FDI *outflows or inflows)*

$$Y_{i,j,t} \begin{cases} = 0 \text{ (no FDI flows relationship)} \\ \\ = 1 \text{ (positive FDI flows relationship)} \end{cases}$$

Continuing to explain equation (7.3), *Zi* is the standard normal variable i.e. $Z \sim N(0, \sigma^2)$. F is the standard normal cumulative distribution function (CDF) which when written explicitly in the present context is:

$$F(U_{i,j,t}) = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^{U_{i,j,t}} e^{-\frac{z^2}{2}} \, dz = F(U_{i,j,t}) =$$

$$= \frac{1}{\sqrt{2\pi}} \int_{-\infty}^{\beta_0 + \beta_1(\gamma_1) + \beta_2(\gamma_2) + \beta_3(\gamma_3) + \beta_4(\gamma_4)} e^{-\frac{z^2}{2}} \, dz \tag{7.4}$$

Since *P* represents the probability that an event will occur, here - the probability of county i investing in country j at time t, it is measured by the area of the standard normal curve from $-\infty$ to $U_{i,j,t}$. To obtain information on this utility index $U_{i,j,t}$ as well as on the regression coefficients β_1^4, the inverse of equation 7.2 would be taken to obtain:

$$U_{i,j,t} = F^{-1}(U_{i,j,t}) = F^{-1}(Pi) = (\beta_0 + \beta_1(\gamma_1) + \beta_2(\gamma_2) + \beta_3(\gamma_3) + \beta_4(\gamma_4)) \tag{7.5}$$

Where F^{-1} is the inverse CDF; In order to obtain the index values of $(U_{i,j,t})$ and the values for the coefficients β_1^4, a level for all the explanatory variables γ_1^4 would first have to be set and then calculate.

Marginal Effects of the independent variables

In the context of the probabilistic models, the quantitative impact that each of the independent variables have on the dependent variable is called a marginal effect. In linear models such as the OLS, the relationship between the dependent and independent variables has perfect proportionality because of the linear nature of the model. The probabilistic models are non-linear and therefore each independent variable has a different marginal effect on the dependent for every observation in the sample. Each of these marginal effects for every

independent variable can be estimated using an econometric software package (Eviews in this case). Once they are calculated, they can be used for interpretation simply by taking the average of all of the individual marginal effects for all observations per independent variable. For example, the marginal effect that the shared border has on the dependent variable in any of the estimations in this chapter is the mean of the individual marginal effects for all observations in the shared border variable. The interpretation of the marginal effect that the independent variable has on the probability whether there will be FDI flows between two countries is interpreted through a unit change in the independent variable. In the case of the independent variables which are also dummy variables the interpretation is straightforward and if for example the shared border variable had a marginal effect of 5% on the dependent variable this would be interpreted as a 5% increase of the probability of having an FDI relationship between two countries when the two countries in the bilateral pair share a border. In the case when the independent variables aren't dummy variables but are estimated with logarithms the interpretation is slightly more complex. The marginal effect for each independent variable is an average of the marginal effects for all observations of that variable in the regression. Therefore I would also have to take into account the average value of the independent variable for which I wish to interpret the marginal effect. For an independent variable that has the form of log (x) a unit increase in the log (x) means a 100% increase in x (the original value of the variable). Thus, if the average GDP of the receiving country is around $US 400 billion and it has a marginal effect of e.g. 15% the interpretation would be an increase of 400 billion in the GDP would increase the probability of an FDI flow between two countries by 15%. Obviously, the interpretations for these variables are a greater approximation because it's an average from a lot of different countries and one would have to look at specific country observations to get a better idea of the country specific sensitivity to changes in GDP for example.

7.3. Probability of attracting FDI flows results

This section discusses the findings of the probit analysis of FDI flows. I test to see if the chosen factors increase the probability of an FDI relationship taking place between two countries and if so, by how much. Thus the dependant variable takes the value of 1 if the there is a reported positive FDI inflow or outflow and zero if there is a zero relationship reported. I show how the probability of having FDI flows between two countries increases through the previously established sets of variable groups: macroeconomic, physical, institutional and cultural proximity. Similarly to the empirical analysis in the previous chapters, I also show this analysis on a regional and country level. In this chapter, the country analysis for several countries is unavailable due to data restrictions coming from either a generally insufficient number of observations or an unsuitable cross section to time dimension ratio for the estimations to be executed by the software program. Thus the country-level results should be interpreted with caution.

7.3.1. Probability of having an FDI relationship (full panel)

Table 7.1 shows results for the probability of a relationship occurring between the FDI inflows and outflows bilateral country pairs. The results are consistent with the findings in chapters 4 & 5 and all the signs of the variables have the expected influence on the probability of an FDI relationship occurring between two countries. Table 7.1 shows the coefficients of the independent variables in the probit analysis as well as their individual average marginal effect on the dependent variable which will give us a clearer picture on the magnitude of the impact that the factors have on FDI flows. The marginal effects are interpreted as percentages. The interpretation of the marginal effect that the independent variable has on the probability whether there will be FDI flows between two countries is interpreted through a unit change in the independent variable whatever the unit of the dependent variable is.

The results for FDI outflows are presented on the right-hand side of table 7.1. The institutional and cultural familiarity factors are positive and significant with the exception of the cultural distance index which is expected to be negative. *The shared membership of an economic or a political organisation* will increase the probability of having FDI flows by 3%. This factor, albeit not terribly strong, is something that is country policy-dependent and by knowing this fact, countries should seek to join the international organisations in order to benefit from increased FDIs. *The shared origin of the legal system* which represents an institutional familiarity has a stimulating effect on the probability of having an FDI outflow to a particular destination. Sharing a legal system origin will increase the probability of having an FDI relationship with the other country by 2%. With this in mind, although the legal system can't be dramatically changed, countries should seek to implement solutions which would make the institutional organisation more familiar to all investors by either making the legal environment in co-ordinance with the international or perhaps complementary to the countries with which the country in question shares a membership to an economic and political organisation. *Shared history* between countries increases the probability of having FDI flows among them by 14%. Since having history in common isn't something that can be amended, countries should take advantage of this significant effect that this familiarity has on FDI flows and orient their policy in a direction that stimulates and facilitates investment ties with countries with which they have history in common. This variable consists of having shared a colonial past of any sort and having been in the same country sometime in the past. Since the predominant colonial relationships are in Africa or South America and many of

Table 7.1. Probability of having an FDI flows relationship - full panel

Dependant variable is a binary choice with 1 if there is an FDI relationship between country i to j at time t; The FDI flows are from the FDI sending country towards the FDI receiving. The explanatory variables are: Log of the GDP of the FDI receiving country; log of the GDP for the FDI sending country; trade openness (ratio of exports plus imports over GDP) for the FDI receiving country; trade openness (ratio of exports plus imports over GDP) for the FDI sending country; the log of the physical distance between the country i and j in kilometres; shared border dummy (value of one if country i and j share a border); shared economic or political organisation dummy (value of one if country i and j share membership in the same economic or political organisation); same legal origin dummy (one if country i and j share the same origin of their legal systems); shared language (one if country i and j share the same official language or language of the minorities); shared history (one if country i and j share history with respect to having had a past colonial relationship or having been part of the same country) and the cultural distance index based on Kogut and Singh (1988). The z-statistics are based on standard errors that have been adjusted for cross-sectional heteroskedasticity using the White (1980) method; Fixed effects used; Note that *, **, *** stand for significant coefficients at the 10%, 5% and 1% level respectively;

Variable	FDI inflows Y=1 (FDI relationsh.) Y=0 (no relationsh.)	FDI inflows average marginal effect on dep. variab.	FDI outflows Y=1 (FDI relationsh.) Y=0 (no relationsh.)	FDI outflows average marginal effect on dependent variable
C	-10.03 ***	n/a	-10.97 ***	n/a
(Log) GDPrec	0.84 ***	**0.18**	0.91 ***	**0.17**
(Log) GDP send	1.22 ***	**0.26**	1.43 ***	**0.26**
Openness rec	0.70 ***	**0.15**	0.25 ***	**0.05**
Openness send	0.57 ***	**0.12**	0.75 ***	**0.14**
(Log) Distance	-0.46 ***	**-0.10**	-0.47 ***	**-0.09**
Same Continent	0.25 ***	**0.05**	0.44 ***	**0.09**
Border	0.33 ***	**0.07**	-0.01	**-0.001**
Shared Econ. Org.	0.61 ***	**0.13**	0.14 ***	**0.03**
Same Legal System	0.23 ***	**0.05**	0.10 **	**0.02**
Shared History	0.63 ***	**0.14**	0.75 ***	**0.14**
Shared Language	0.67 ***	**0.15**	0.39 ***	**0.07**
Cul. Dist. Ind.	-0.01 ***	**-0.02**	0.01 ***	**0.002**
N	13,802		13,838	
N of y =1	9,758		11,304	
N of y=0	4,044		2,534	
McFadden R^2	0.37		0.31	

these countries are also developing countries that depend on FDI know-how and technological spillovers, they should seek to exploit this fact in order to get more FDI from the other countries with which they no doubt share similar culture and perhaps institutional similarity. *The shared language* also has a stimulating influence on the probability of having FDI flows. It will increase the probability that the two countries in the pair have an FDI relationship by 7%. Similarly with the shared history, the languages aren't something that can be changed, however countries could seek to promote investments between countries with which they share this trait in common or adapt the institutional aspects of foreign direct investing to investors with lesser familiarity. In the case of FDI outflows *the cultural distance index* is significant but doesn't have the expected negative sign. Furthermore, it only has a negligible marginal effect on having an FDI relationship of 0.2% (when compared to the other factors). I expect that when the cultural distance between two countries is smaller, the probability of having FDI flows will be higher.

In the physical proximity group, *the shared border* isn't significant in the case of FDI outflows. *The distance* has a negative impact on the probability of FDI outflows, indicating that on average, as the distance grows by approximately 6000 km, the probability of having an FDI relationship with another country falls by 9%. This isn't a factor that can be changed with anything other than perhaps progress in the means of production and transport but it's surely within limited reach of country policy changes. The same is true for countries that are located on the *same continent*, there isn't much that can be changed about this even though the result shows that there is a 9% greater probability to have FDI flows in the two countries are on the same continent.

The greater *the GDP* or both the sending and receiving countries, the greater the probability that there will be and FDI outflow from county i to j at time t. On average, an increase in the GDP of the receiving country by around $US 400 billion will increase the probability of

having an FDI flow between two average countries by 17% while an average increase in the GDP of the sending country by around US$ 1 trillion (the average of the GDP of the FDI outflows sending country is much greater than the average for the receiving country in this sample) will increase the probability of an FDI outflow from one country to a country where there hasn't been an FDI investment by 26%. The same is true for *the country openness to trade* – it increases the probability of FDI outflows to country j,t. An increase in the openness to trade (a percent of exports plus imports over GDP) of the receiving country by around 75% will increase the probability of FDI occurring by 5% while an increase in the sending country's openness by approximately 69% will increase making an FDI by 14%. This result is consistent with the externalization theory of FDI flows which states that the MNEs will first start to export their products before venturing to make an FDI. Though changes to these macro-variables can't be made in the short run, by setting this as a long term goal, countries could significantly increase the probability of FDI flows. Since the country's GDP is dependent on a lot of factors, this policy is perhaps better suited for the country openness to trade in terms of lowering the barriers to trade. If it is known that openness to trade increases the probability of FDI flows, this is one area that could be improved policy-wise, in a relative short-term. This will force the domestic markets to become more competitive which will in turn have a stimulating effect on the country's GDP. Ultimately this is one of the main known benefits of having FDI flows and something why smaller and poorer countries seek to increase having FDIs.

FDI inflows

The FDI inflows results are in the left-hand side of table 7.1 and show that all of the variables are statistically significant and hold the expected sign. The FDI inflows results are more pronounced than the FDI outflows panel results.

In the institutional proximity group, the shared membership of an economic or a political organisation and the same origin of the legal system will increase the probability of having FDI inflows. *The shared economic and political organisation* increases having FDI flows by 13%. This indicates that the OECD countries have an increased probability that their FDI will come from fellow members in the OECD, EU, etc. The shared *origin of the legal system* will increase the probability of having FDIs by 5%. Though not especially high, this institutional influence is not negligible. Same as in the case of FDI outflows, countries should seek to increase the country's institutional familiarity or exploit this familiarity in order to increase the FDI inflows to their country.

From the cultural proximity variable group, the shared history between countries and the shared language increase the probability of having FDI inflows to them. The *shared history* increases the probability of having FDI by 14% (same as in the case of FDI outflows). The *shared language* will in this case increase having an FDI flow by 15%, double of the influence of this factor in the case of FDI outflows. Since these factors can't be modified with policy, countries should take advantage of this familiarity and seek to stimulate investment ties with countries with which they share this familiarity. In the case of FDI inflows the *cultural distance index* is significant and it has the expected negative sign. When the cultural distance between two countries is smaller, the probability of having FDI inflows will be higher. Increasing the cultural distance by one unit (an index point) will decrease the probability of FDI by 2%.

In the physical proximity group, the shared border and shared continent have a positive influence on the probability of having FDI inflows, indicating that the probability of FDI inflows is greater from countries with which there is a shared border or a general regional closeness. Sharing a *border* with another country will increase the probability of having FDI from that country by 7%. Being on the *same continent* will increase the probability of having

FDI flows from a country on the same continent by 5%. The *distance* has a negative impact on the probability of FDI inflows, indicating that on greater distances the probability of FDIs is smaller. As the distance increases by around 6000 km, the probability of having a FDI relationship with another country at that distance decreases by 10%. As I noted before, the physical proximity group of factors isn't something that can be influenced on other than factors beyond reach of a government.

The greater *the GDP* or both the sending and receiving countries, the greater is the probability that there will be an FDI inflow to county i from j at time t. An increase in the GDP of the receiving country by approximately 870 billion will increase the probability of FDI by 18% while an increase in the GDP of the sending country by approximately 400 billion will increase the probability of FDI flows occurring by 26% (same as in the case of FDI outflows). The same is true for the *country openness to trade* – it increases the probability of FDI inflows from country j,t. In the case of the openness of the receiving country, an increase in this of around 70% will increase the probability of having FDI by 15% while an increase in the openness of the sending country by approximately 79% will increase the probability of making an FDI by 12%. Same as the case of outflows, this is something that can be slowly influenced and acted upon, in order to increase the probability of FDI inflows.

7.3.2. Probability of having an FDI relationship by continent

This analysis focuses on the probability of an FDI flow occurring from countries located on the same continent. This will give us a clearer picture whether there is something more specific in terms of the factors that determine this probability when it comes to a specific region and whether some factors matter more in certain regions than others. Since the in the previous analysis I described in greater detail the expected influence of the explanatory variables on the probability that the event specified by the dependent will occur, in this

section I will focus on any differences or particularities there may be. The results are presented similarly to the full panel analysis previously, for FDI inflows and outflows by individual continent.

Europe

Table 7.2 presents the results of the regional probit analysis for the case of FDI inflows and outflows when the FDI sending country is located on the European continent. As most of the OECD countries are located in Europe (23 of 30), this analysis has the most observations.

FDI outflows

The results for FDI outflows of the European continent are presented on the left-hand side of table 7.3. They show the probability of an FDI outflow occurring from the countries located in Europe. In this case, the results are fully consistent with the full panel analysis findings.

From the institutional and cultural proximity group of variables, the *shared economic and political organisation* dummy is positive and significant and will increase the probability of the European countries investing in a country with which they share this economic or political membership by 6%. The *shared legal system origin* variable isn't statistically significant. On the cultural familiarity group, the shared history in the country pair is positive and significant and will increase the probability of a European country investing in another country with which it shares history by 13% which is more than negligible. This means that the European countries invest predominantly among themselves as there is a lot of shared history among European countries and with the courtiers with which they had colonial ties which are

Table 7.2. Probability of having an FDI flows relationship - EUROPE

Dependant variable is a binary choice with 1 if there is a positive FDI flow from country i to j at time t; this is *for the FDI flows sending country located in Europe*; The FDI flows are from the FDI sending country towards the FDI receiving. The explanatory variables are: Log of the GDP of the FDI receiving country; log of the GDP for the FDI sending country; trade openness (ratio of exports plus imports over GDP) for the FDI receiving country; trade openness (ratio of exports plus imports over GDP) for the FDI sending country; the log of the physical distance between the country i and j in kilometres; shared border dummy (value of one if country i and j share a border); shared economic or political organisation dummy (value of one if country i and j share membership in the same economic or political organisation); same legal origin dummy (one if country i and j share the same origin of their legal systems); shared language (one if country i and j share the same official language or language of the minorities); shared history (one if country i and j share history with respect to having had a past colonial relationship or having been part of the same country) and the cultural distance index based on Kogut and Singh (1988). The z-statistics are based on standard errors that have been adjusted for cross-sectional heteroskedasticity using the White (1980) method; Fixed effects used; Note that *, **, *** stand for significant coefficients at the 10%, 5% and 1% level respectively;

Variable	FDI outflows EUROPE (send) Y=1 (FDI relationsh.) Y=0 (no relationsh.)	FDI outflows average marginal effect on dependent variable	FDI inflows EUROPE (send) Y=1 (FDI relationsh.) Y=0 (no relationsh.)	FDI inflows average marginal effect on dependent variable
C	-13.62 ***	n/a	-10.37***	n/a
(Log) GDPrec	0.90 ***	**0.16**	0.66***	**0.11**
(Log) GDP send	1.77 ***	**0.32**	1.72***	**0.28**
Openness rec	0.25 ***	**0.05**	0.25***	**0.04**
Openness send	0.92 ***	**0.16**	0.91***	**0.14**
(Log) Distance	-0.27 ***	**-0.05**	-0.70***	**-0.11**
Same Continent	0.48 ***	**0.09**	-0.07	**-0.01**
Border	0.14	**0.03**	0.50***	**0.08**
Shared Econ. Org.	0.31 ***	**0.06**	0.38***	**0.06**
Same Legal System	0.04	**0.00**	0.29***	**0.05**
Shared History	0.69 ***	**0.13**	0.08	**0.02**
Shared Language	0.58 ***	**0.10**	0.85***	**0.14**
Cul. Dist. Ind.	0.01 ***	**0.002**	0.00	**-0.00**
N	10,687		6,696	
N of y =1	1,869		5,640	
N of y=0	8,818		1,056	
McFadden R²	0.31		0.35	

typically on another continent. This may explain why the physical distance factor will only diminish the probability of having FDIs by 5% as opposed to a typically higher percentage in the other regressions. The *shared language* will increase the probability of a European country investing in a linguistically similar country by 10%. The *cultural distance index* is positive and significant which is quite unexpected, however its influence is negligible as it will affect the probability of FDI by only 0.02%.

From the physical proximity group, an increase in *the distance* by around 5000 km on average as mentioned earlier will only diminish the probability of having an FDI outflow from a European country by 5% which means that the European countries do invest at faraway places. The location of a country in Europe will increase the probability of an FDI outflow from a fellow European country by 9%. The *shared border* variable isn't significant.

From the macroeconomic variables, *the GDP* of the receiving country will increase the FDI probability by 16% when the GDP of the receiving country increases by $US 388 billion whereas an increase in GDP of the sending country by approximately $US 1 trillion will increase the FDI probability by 32%. This indicates that the richer the sending country, the greater the probability that it will make FDIs in any location in the world. In the *country openness* variables we can observe the same situation. While both of these variables increase the probability of FDI outflows occurring from a European country, there is a much greater probability that the outflows will occur if the sending country is more open, with the sending country FDI probability increasing by 16% and the receiving by 5% when on average the sending and receiving countries have an increased trade openness by 77% and 75% respectively.

FDI inflows

The results for the FDI inflows regression for the European continent are in the right-hand side of table 7.2. In this case the FDI inflows sending country is located in Europe while the receiving country can be any of the OECD countries. The analyses in this table show an overall confirmation of the findings from the full panel analysis.

Of the institutional proximity variables, both of them are positive and significant. The shared political and economic organisation dummy variable will increase the probability of FDI inflows by 6%, while sharing the same origin of the legal system will increase this probability by 5%. In the cultural proximity group only the shared language variable is significant and will increase the probability of FDI inflows from Europe by 14%. The other two variables in this group aren't significant. In the physical proximity group, a shared border will increase the probability of FDI inflows from European countries to their neighbours by 8%. The distance in this case will decrease the probability of having an FDI relationship from Europe by 11% when the distance increases by approximately 3600km. In terms of the macroeconomic variables, the sending country's traits have a significantly higher importance in predicting FDI flows similarly to the case of European outflows. Both the GDP and the trade openness have a higher influence on the probability of having an FDI relationship. When the GDP of the receiving and sending country increases by approximately $US 845 billion and $US 344 billion it will increase the probability of FDI inflows occurring with 11% and 28% respectively. An increase in the trade openness by 68% and 85% for the receiving and sending country will increase the FDI probability by 4% and 14%for the receiving and sending country.

Table 7.3. Probability of having an FDI flows relationship – ASIA-PACIFIC

Dependant variable is a binary choice with 1 if there is a positive FDI flow from country i to j at time t; this is *for the FDI flows sending country located in Asia-Pacific*; The FDI flows are from the FDI sending country towards the FDI receiving. The explanatory variables are: Log of the GDP of the FDI receiving country; log of the GDP for the FDI sending country; trade openness (ratio of exports plus imports over GDP) for the FDI receiving country; trade openness (ratio of exports plus imports over GDP) for the FDI sending country; the log of the physical distance between the country i and j in kilometres; shared border dummy (value of one if country i and j share a border); shared economic or political organisation dummy (value of one if country i and j share membership in the same economic or political organisation); same legal origin dummy (one if country i and j share the same origin of their legal systems); shared language (one if country i and j share the same official language or language of the minorities); shared history (one if country i and j share history with respect to having had a past colonial relationship or having been part of the same country) and the cultural distance index based on Kogut and Singh (1988). The z-statistics are based on standard errors that have been adjusted for cross-sectional heteroskedasticity using the White (1980) method; Fixed effects used; Note that *, **, *** stand for significant coefficients at the 10%, 5% and 1%

Variable	FDI outflows ASIA-PACIFIC (send) Y=1 (FDI relationsh.) Y=0 (no relationsh.)	FDI outflows average marginal effect on dependent variable	FDI inflows ASIA-PACIFIC (send) Y=1 (FDI relationsh.) Y=0 (no relationsh.)	FDI inflows average marginal effect on dependent variable
C	-2.36	n/a	-12.29 ***	n/a
(Log) GDPrec	1.41 ***	**0.23**	1.02 ***	**0.29**
(Log) GDP send	0.93 ***	**0.15**	1.26 ***	**0.34**
Openness rec	0.97 ***	**0.16**	0.98 ***	**0.27**
Openness send	-1.55 ***	**-0.25**	0.52 ***	**0.14**
(Log) Distance	-2.28 ***	**-0.36**	-0.21 **	**-0.06**
Same Continent	-0.16	**-0.03**	-0.18 **	**-0.05**
Border	NA	**NA**	0.08	**0.03**
Shared Econ. Org.	-0.21 **	**-0.04**	0.54 ***	**0.15**
Same Legal System	-0.06	**-0.01**	-0.11 *	**-0.03**
Shared History	0.94 *	**0.15**	0.76 ***	**0.21**
Shared Language	0.44 ***	**0.07**	0.81 ***	**0.23**
Cul. Dist. Ind.	-0.03 ***	**-0.005**	-0.02 ***	**-0.006**
N	2,148		3,714	
N of y =1	499		2320	
N of y=0	1,649		1394	
McFadden R²	0.46		0.26	

Table 7.3 shows the results of the probit analysis for the FDI inflows and outflows that occur from the Asian-Pacific region. The number of observations is somewhat smaller when compared to Europe. The Asian-Pacific continent analysis shows overall similar findings but has two variables that have the opposite influence on the probability of having FDIs than the expected.

FDI outflows

The FDI outflows results are shown in the left side of table 7.3. They generally follow the general panel results but have some particularities. In the institutional and cultural proximity groups, the *shared legal origin and history* aren't significant. The *cultural distance index* is significant but similarly to the other regressions it has a negligible influence of 0.5%. The probability of FDI outflows from Asia-Pacific will diminish by 0.5% the more culturally distant the partner country is. The *shared language* on the other hand will increase the probability of an FDI relationship occurring by 7%. The *shared economic and political organisation* variable has a negative effect on the probability of FDI flows which is contrary to the expectation; according to the results, diminish the probability of FDI by 4%. One explanation might be due to the fact that the Asian countries do not have their own regional organisation represented in this variable that might highlight this common trait. In the physical proximity group, the only significant variable is the *physical distance* which has one of the greatest impacts in all of the analyses in this chapter thus far. An increase in the distance by approximately 10,000 km will lower the probability of having an FDI by 36%. This means that the Asian-Pacific countries prefer to invest within the region. The greater *openness* of the FDI outflows sending country (an OECD member) has a negative impact on the probability of having an FDI outflow and will decrease the probability of having an FDI

by 25%, when the trade openness increases by 46% which is contrary to the theoretical expectation. The openness of the receiving country will increase the probability of FDI outflows by 16% when the openness increases on average by 74%. The GDP of the receiving and sending countries will increase the probability of an FDI occurring from Asia-Pacific by 23% and 15% respectively when the average GDP increases by US$ 140 and $US 500 for the receiving and sending country respectively.

FDI inflows

The results for FDI inflows from the Asian-Pacific region can be found on the right side of table 7.3. The results are predominantly consistent with the general expectations for the variables. The exception here is the same continent variable which indicates that the probability of FDI occurring will be 5% less if the country pair is on the same continent. This is possibly because in this analysis there are countries from two continents (Asia and Pacific). The shared economic or political organisation will increase the FDI inflows from Asia-Pacific by 15% which is a sharp increase from this variable in the case of FDI outflows. In this case of FDI inflows from Asia-Pacific there is a great impact on the other two variables from this group. The shared history will increase the probability of an FDI inflow from Asia-Pacific by 21% whereas the probability of FDI will increase by 23% when there is a shared language in common. This tells us that when it comes to Asian-Pacific countries, it really matters a great deal if they share a cultural similarity with their investment partners. This should be very useful in country policy matters regarding FDIs. The cultural distance index, though significant, has a very marginal diminishing effect on the probability of FDI inflows of 0.6%. The distance in the case of FDI inflows from the Asian-Pacific region, unlike the case of FDI outflows has a much smaller effect on the probability of FDI flows. It will lessen this probability by 6% compared to the 36% in the case of FDI outflows when the average

distance increases by around 8000 km. Differences like this one highlight the importance of considering both FDI inflows and outflows when there is an unbalanced panel dataset. In the macro-factors, all four variables have a positive and significant influence with a more evened out influence of the sending and receiving countries' macro traits compared to the European analysis. The GDP of the receiving and sending countries will increase the probability of an FDI inflow by 29% and 34% respectively when the GDP increases by $US 950 and $US 400 billion whereas the country openness unit increase will increase the chance of having an FDI by 27% and 14% respectively when the average trade openness increases by 69% and 85%.

America

The American continent regression should be interpreted with some caution because it has the least amount of predictor power. This is due to two facts; it has the smallest number of observations and it represents the FDI outflows of only three countries: US, Canada and Mexico towards their partner countries which is only representative of North America. The case of FDI inflows becomes more important in this case as it represents the FDI flows of more countries from the Americas.

FDI outflows

For the American continent in the case of FDI outflows, the GDP seems to be a very strong predictor of the probability of FDI outflows; the probability of having an FDI relationship increases by 10% and 28% with an average increase of GDP of the receiving and sending countries by $US 585 and $US 640 billion respectively. The shared legal system will increase the probability of FDI outflows from North America by 7%. The shared history also matters and the probability of FDI outflows increases by 10% if the countries have history in common. The rest of the variables are insignificant. This regression has around 1,000

observations and with a high quasi-R2, it seems that when it comes to the American FDI outflows, the probability whether they will invest abroad is strongly determined by the macroeconomic factors and familiarity factors such as shared origin of the legal system and shared history with another country.

FDI inflows

This table shows results for the probability of a relationship occurring between the FDI inflows from the American continent. The Americas analysis generally follows the previous findings except in this case the shared economic and political organisation variable is negative and indicates that there is a 5% less chance of an FDI inflow when this variable takes the value of one which is contrary to the expected. The shared origin of the legal system is positive and significant and will increase the probability of an FDI inflow by 6%. The cultural proximity variables are important in the likelihood of having an FDI inflow from the American continent with the shared history increasing the probability of FDI by 17% and the shared language increasing this probability by 15%. This finding is similar to the findings for the FDI inflows from the Asian-Pacific region. The cultural distance index is significant but like in the other regressions it has a very marginal influence of just 0.5%. The physical distance plays a very big role in this analysis and will diminish the probability of an FDI inflow from the American continent by 42% with an average increase in distance by 9000km. All four macro-factors are positive and significant. The GDP of the receiving and sending countries will increase the likelihood of an FDI inflow by 22% and 30% respectively when the GDP increases by $US 880 and $US 930 billion respectively. Likewise, the trade openness of the receiving and sending countries will increase the probability of FDI inflows from the American continent by 22% and 30% respectively when the openness increases by approximately 70% and 64%. Overall it may be concluded that the FDI inflows analysis is more consistent and more informative than the one for FDI outflows in the case of America.

Table 7.4. Probability of having an FDI flows relationship - AMERICA
Dependant variable is a binary choice with 1 if there is a positive FDI flow from country i to j at time t; this is *for the FDI flows sending country located in America*; The FDI flows are from the FDI sending country towards the FDI receiving. The explanatory variables are: Log of the GDP of the FDI receiving country; log of the GDP for the FDI sending country; trade openness (ratio of exports plus imports over GDP) for the FDI receiving country; trade openness (ratio of exports plus imports over GDP) for the FDI sending country; the log of the physical distance between the country i and j in kilometres; shared border dummy (value of one if country i and j share a border); shared economic or political organisation dummy (value of one if country i and j share membership in the same economic or political organisation); same legal origin dummy (one if country i and j share the same origin of their legal systems); shared language (one if country i and j share the same official language or language of the minorities); shared history (one if country i and j share history with respect to having had a past colonial relationship or having been part of the same country) and the cultural distance index based on Kogut and Singh (1988). The z-statistics are based on standard errors that have been adjusted for cross-sectional heteroskedasticity using the White (1980) method; Fixed effects used; Note that *, **, *** stand for significant coefficients at the 10%, 5% and 1%

Variable	FDI outflows AMERICAS (send) Y=1 (FDIrelationsh.) Y=0 (no relationsh.)	FDI outflows average marginal effect on dependent variable	FDI inflows AMERICAS (send) Y=1 (FDIrelationsh.) Y=0 (no relationsh.)	FDI inflows average marginal effect on dependent variable
C	-38.77 ***	n/a	-6.22 ***	n/a
(Log) GDPrec	1.63 ***	**0.10**	1.03 ***	**0.22**
(Log) GDP send	4.52 ***	**0.28**	1.39 ***	**0.30**
Openness rec	-0.02	**-0.002**	1.14 ***	**0.24**
Openness send	1.73	**0.11**	1.10 ***	**0.23**
(Log) Distance	0.13	**0.008**	-2.01 ***	**-0.42**
Same Continent	1.03 *	**0.07**	0.05	**0.02**
Border	NA	**NA**	NA	**NA**
Shared Econ. Org.	0.50 *	**0.03**	-0.24 **	**-0.05**
Same Legal System	1.06 ***	**0.07**	0.26 ***	**0.06**
Shared History	1.59 ***	**0.10**	0.79 ***	**0.17**
Shared Language	0.45	**0.03**	0.68 ***	**0.15**
Cul. Dist. Ind.	0.01	**0.00**	-0.02 ***	**-0.005**
N	**1,003**		**3,047**	
N of y =1	**837**		**1,633**	
N of y=0	**166**		**1,414**	
McFadden R²	**0.75**		**0.46**	

Table 7.5. Probability of having an FDI outflows flows relationship – by individual country

Dependant variable is a binary choice with 1 if there is an FDI outflows relationship between country i to j at time t; The FDI outflows are from the FDI sending country towards the FDI receiving country. The explanatory variables are: Log of the GDP of the FDI receiving country; log of the GDP for the FDI sending country; trade openness (ratio of exports plus imports over GDP) for the FDI receiving country; trade openness (ratio of exports plus imports over GDP) for the FDI sending country; the log of the physical distance between the country i and j in kilometres; shared continent dummy (value of one if the two country i and j are one the same continent); shared border dummy (value of one if country i and j share a border); shared economic or political organisation dummy (value of one if country i and j share membership in the same economic or political organisation); same legal origin dummy (one if country i and j share the same origin of their legal systems); shared language (one if country i and j share the same official language or language of the minorities); shared history (one if country i and j share history with respect to having had a past colonial relationship or having been part of the same country); cultural distance index (Kogut and Singh, 1988). The z-statistics are based on standard errors that have been adjusted for cross-sectional heteroskedasticity using the White (1980) method; Note that *, **, *** stand for significant coefficients at the 10%, 5% and 1% level respectively.

	Const.	LGDP of FDI rec. country	LGDP of FDI send country	Openness rec. country	Openness of send. country	L distance	Same Cont.	Shared Border	Econ. Organs. Dummy	Legal origin dummy	Shared History	Shared Lang.	CD index
Australia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Austria	-116.17 ***	2.05 ***	20.73 ***	0.93 ***	-4.08 ***	0.01	1.20 ***	-0.78 *	-0.08	-1.61 ***	1.95 ***	3.99 ***	-0.02
Belgium	-29.54	3.14	-5.87	-0.08	3.52	9.99	11.01 *	-6.70	7.34	0.31	14.96	NA	0.09
Canada	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Czech R.	-11.25	1.14 ***	1.23	0.51 ***	0.91	-0.76	1.03 *	5.98	-0.14	0.84 **	NA	0.55	0.00
Denmark	39.90 ***	1.31 ***	-10.94 ***	0.59 ***	14.46 ***	-0.20	0.45	-0.58	0.39 *	0.68 *	NA	NA	-0.03 ***
Finland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
France	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Germany	-36.10 ***	1.06 ***	4.54 **	0.88 ***	-0.06	1.01 **	0.71	-0.57	1.01 ***	5.94	7.00	0.32	0.01
Greece	-75.28 **	0.98 ***	12.74 **	-0.03	12.79 **	-0.55	1.25 **	5.94	-0.08	-0.57	NA	NA	0.01
Hungary	-29.44	1.11 ***	5.47	1.06 ***	2.00	-1.58 ***	-0.47	8.35	1.06 ***	0.21	NA	0.09	-0.04
Iceland	-163.89	-0.14	36.09	-0.06	2.32	7.11 *	0.49	NA	2.95 **	1.48	NA	NA	-2.46
Ireland	-74.66	3.43	13.43	1.33	7.30	-6.50 **	-3.79 *	NA	2.03	3.00 **	-2.82	-0.49	-0.20 *
Italy	70.87 ***	1.65 ***	-13.59 ***	0.42 *	8.13 **	-0.10	1.08 **	5.49	0.08	0.05	-0.07	NA	-0.05 *
Japan	103.53 **	2.61 ***	-17.20 ***	2.10 **	-16.59	0.17	0.33	NA	1.60 *	4.08	NA	1.63	-0.07 *
Korea	-1.45	1.29 ***	0.01	1.05 ***	-0.24	-1.26 **	0.06	NA	-0.30	-0.12	5.13	0.79 ***	-0.05 ***
Luxemb.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mexico	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Netherl.	-153.23 ***	1.11 ***	27.32 ***	0.18	-7.83 *	1.94 ***	1.27 *	0.00	9.45	-0.83 *	6.15	-7.73	0.03
New Zeal.	45.99 ***	1.84 ***	-9.13 ***	1.36 ***	4.08	-4.11 ***	4.99	NA	0.01	0.31 *	1.10	-0.15	0.00
Norway	47.79 *	1.77 ***	-11.14 *	3.83 *	4.15	-1.60	-0.72	-1.37	2.50 ***	7.59	NA	NA	0.02
Poland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Portugal	103.00 **	1.51 **	-22.84 ***	-2.54	7.67	-1.33	0.06	6.54	0.90	1.55 *	NA	1.03	0.21 **
Slovakia	70.77	1.25 ***	-18.45	-0.24	6.78	-2.31 ***	-1.00	7.64	-0.03	0.15	0.04	1.66 *	0.00
Spain	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sweden	-39.88 **	1.60 ***	4.94	1.25 **	1.50	1.37 **	1.08 *	7.42	1.03 **	-0.45	8.71	-8.36	0.00
Switzerl.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Turkey	-54.69 ***	1.20 ***	10.55 ***	0.39 ***	-9.15 **	-1.71 ***	0.03	0.58 *	-0.04	0.14	-0.25	1.31 *	NA
UK	14.72	1.84 ***	-5.35	1.03 *	6.40	1.81 ***	1.87 ***	0.04	-0.27	6.60	0.29	-0.18	-0.04 *
USA	-121.91 **	1.30 ***	15.00 *	-0.36	-17.95	4.35 **	1.19	6.99	1.86 ***	7.94	6.37	0.39	0.06

FDI outflows

Table 7.5 (above) shows results for the probability of an FDI outflows relationship occurring by country, while table 7.6 (below) shows that marginal effects of the independent variables on the dependent variable for this analysis. Similarly to the country analyses in chapter 5, due to data limitations some of the country regressions cannot be performed (the number of countries in this analysis is 21) and the general results aren't very strong compared to the continent and full panel analysis or even when compared to the country analysis in chapter 5. The probit model estimations prove to be more difficult to estimate with a limited number of observations than the OLS.

From the 21 country regressions the strongest predictive power lies with the GDP and openness to trade of the receiving country. The GDP of the FDI outflows sending country has 10 significant variables out of 21 but 5 of them have a negative sign. About 50% of the distance variables are significant but most of them do not have the anticipated negative influence on the probability of FDI outflows between two countries. Of the other variables of interest, only the shared economic or political organisation variable has some significant variables. Of them, shared membership to an economic organisation will increase the probability of FDI relationship of Iceland to other countries by 42% by 19% for Hungary and 12% for Norway. Sharing the same legal system origin will increase the FDI potential for the Czech Republic by 19% and 24% for Ireland. The shared history will increase the probability of an FDI relationship of Austria by 36% and a shared language with Austria will increase the probability of FDI flows occurring by 74%. This indicates that Austrian FDI outflows occur predominantly in countries which are nearby (with whom Austria shared history) and also where there is a German speaking population (also nearby countries). All of this suggests that it's very difficult to draw any general conclusions from the individual country analysis due to data limitations.

Table 7.6. Marginal effects of the independent variables on the dependent variable - FDI outflows

Dependant variable is a binary choice with 1 if there is an FDI outflows relationship between country i to j at time t; The FDI outflows are from the FDI sending country towards the FDI receiving country. The explanatory variables are: Log of the GDP of the FDI receiving country; log of the GDP for the FDI sending country; trade openness (ratio of exports plus imports over GDP) for the FDI receiving country; trade openness (ratio of exports plus imports over GDP) for the FDI sending country; the log of the physical distance between the country i and j in kilometres; shared continent dummy (value of one if the two country i and j are one the same continent); shared border dummy (value of one if country i and j share a border); shared economic or political organisation dummy (value of one if country i and j share membership in the same economic or political organisation); same legal origin dummy (one if country i and j share the same origin of their legal systems); shared language (one if country i and j share the same official language or language of the minorities); shared history (one if country i and j share history with respect to having had a past colonial relationship or having been part of the same country); cultural distance index (Kogut and Singh, 1988). The t-statistics are based on standard errors that have been adjusted for cross-sectional heteroskedasticity using the White (1980) method; NA stands for not available; insig. stands for statistically insignificant variable;

	LGDP of FDI rec. country	LGDP of FDI send country	Openness rec. country	Openness of send. country	L distance	Same Cont.	Shared Border	Econ. Organs. Dummy	Legal origin dummy	Shared History	Shared Lang.	CD index
Australia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Austria	0.38	3.80	0.17	-0.75	Insig.	0.22	Insig.	Insig.	-0.30	0.36	0.74	Insig.
Belgium	Insig.	Insig.	Insig.	Insig.	Insig.	Insig.	Insig.	Insig.	Insig.	Insig.	NA	Insig.
Canada	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Czech R.	0.19	Insig.	0.12	Insig.	Insig.	Insig.	Insig.	Insig.	0.19	NA	Insig.	Insig.
Denmark	0.23	-1.90	0.11	2.50	Insig.	Insig.	Insig.	Insig.	Insig.	NA	NA	-0.004
Finland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
France	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Germany	0.09	0.38	0.08	Insig.	0.08	Insig.	Insig.	0.09	Insig.	Insig.	Insig.	Insig.
Greece	0.24	3.07	Insig.	3.01	Insig.	0.30	Insig.	Insig.	Insig.	NA	NA	Insig.
Hungary	0.20	Insig.	0.19	Insig.	-0.29	Insig.	Insig.	0.19	Insig.	NA	Insig.	Insig.
Iceland	Insig.	Insig.	Insig.	Insig.	Insig.	Insig.	NA	0.42	Insig.	NA	NA	Insig.
Ireland	Insig.	Insig.	Insig.	Insig.	-0.52	Insig.	NA	Insig.	0.24	Insig.	Insig.	Insig.
Italy	0.18	-1.43	Insig.	0.85	Insig.	0.12	Insig.	Insig.	Insig.	Insig.	NA	Insig.
Japan	0.13	-8.23	0.10	Insig.	Insig.	Insig.	NA	Insig.	Insig.	NA	Insig.	Insig.
Korea	0.32	Insig.	0.26	Insig.	-0.32	Insig.	NA	Insig.	Insig.	Insig.	0.20	0.02
Luxemb.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mexico	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Netherl.	0.41	0.94	Insig.	Insig.	0.07	Insig.	Insig.	Insig.	Insig.	Insig.	Insig.	Insig.
New Zeal.	0.34	-1.68	0.25	Insig.	0.76	Insig.	NA	Insig.	Insig.	Insig.	Insig.	Insig.
Norway	0.09	Insig.	Insig.	Insig.	Insig.	Insig.	Insig.	0.12	Insig.	NA	NA	Insig
Poland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Portugal	0.18	-2.76	Insig.	Insig.	Insig.	Insig.	Insig.	Insig.	Insig.	NA	Insig.	0.03
Slovakia	0.23	Insig.	Insig.	Insig.	-0.43	Insig.	Insig.	Insig.	Insig.	Insig.	Insig.	Insig.
Spain	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sweden	0.13	Insig.	0.10	Insig.	0.11	Insig.	Insig.	0.08	Insig.	Insig.	Insig.	Insig.
Switzerl.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Turkey	0.16	1.40	0.05	-1.20	-0.23	Insig.	Insig.	Insig.	Insig.	Insig.	Insig.	NA
UK	0.09	Insig.	Insig.	Insig.	0.09	0.09	Insig.	Insig.	Insig.	Insig.	Insig.	Insig.
USA	0.04	Insig.	Insig.	Insig.	0.13	Insig.	Insig.	0.06	Insig.	Insig.	Insig.	Insig.

Table 7.7. Probability of an FDI inflows relationship – by individual country

Dependant variable is a binary choice with 1 if there is an FDI inflows relationship between country i to j at time t The FDI inflows are from the FDI sending country towards the FDI receiving country. The explanatory variables are: Log of the GDP of the FDI receiving country; log of the GDP for the FDI sending country; trade openness (ratio of exports plus imports over GDP) for the FDI receiving country; trade openness (ratio of exports plus imports over GDP) for the FDI sending country; the log of the physical distance between the country i and j in kilometres; shared continent dummy (value of one if the two country i and j are one the same continent); shared border dummy (value of one if country i and j share a border); shared economic or political organisation dummy (value of one if country i and j share membership in the same economic or political organisation); same legal origin dummy (one if country i and j share the same origin of their legal systems); shared language (one if country i and j share the same official language or language of the minorities); shared history (one if country i and j share history with respect to having had a past colonial relationship or having been part of the same country); cultural distance index (Kogut and Singh, 1988). The z-statistics are based on standard errors that have been adjusted for cross-sectional heteroskedasticity using the White (1980) method; Note that *, **, *** stand for significant coefficients at the 10%, 5% and 1% level respectively.

	Const.	LGDP of FDI rec. country	LGDP of FDI send country	Openness rec. country	Openness of send. country	L distance	Same Cont.	Shared Border	Econ. Organs. Dummy	Legal origin dummy	Shared History	Shared Lang.	CD index
Australia	226.77	-28.84	2.48	-112.51	5.49	-12.03	-9.98	NA	2.73 *	10.05	-3.03	-0.87	0.01
Austria	24.34	-5.31	1.62 ***	3.05	0.63 **	-1.94 ***	0.12	4.33	0.27	7.61	1.57	5.46	-0.10 ***
Belgium	-104.94	10.07	4.61 **	10.69	0.06	2.82	7.07 *	0.24	-0.40	-1.37	8.38	1.60	0.06
Canada	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Czech R.	-21.12	3.71	1.59 ***	2.92	0.78 ***	-2.68 ***	-0.49	6.21	0.69 **	-0.68	-0.75	NA	0.22 **
Denmark	119.27 ***	-22.54 ***	1.49 ***	-6.95	1.22 **	-2.44 ***	-1.38 *	6.61	1.01 *	1.53 ***	NA	NA	-0.04 *
Finland	15.04	-5.53	1.91 ***	6.48 **	1.23 ***	-0.68	0.98	1.25	0.96 **	7.16	NA	NA	-0.06
France	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Germany	-20.14 ***	1.95 *	1.41 ***	1.97 **	0.73 ***	0.06	0.93 ***	0.30	0.25	-1.43 ***	-0.63	0.52	-0.03 *
Greece	-12.10	1.96 ***	1.33 ***	-1.79	0.73 ***	-1.50 ***	0.20	-1.78 *	0.63 **	0.20	NA	NA	0.02
Hungary	-64.55 ***	12.55 ***	1.39 ***	1.58	0.88 ***	-1.12 **	0.38	7.70	1.44 ***	0.42	-0.87	NA	-0.01
Iceland	-25.78 *	5.96	1.25 ***	2.17	1.31 **	-1.64	-0.24	-0.31	1.25 **	6.94	NA	NA	NA
Ireland	-22.42 ***	5.20 ***	1.36 ***	-4.11 ***	0.51 ***	-1.10 **	-1.46 ***	NA	0.75 ***	-0.77	7.36	0.30	-0.03 *
Italy	15.16	-3.68	1.32 ***	1.91	0.50 **	-0.31	0.52	6.56	0.60 ***	-0.10	NA	-0.15	0.00
Japan	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Korea	-26.25 ***	2.06 ***	1.60 ***	0.35	1.19 ***	1.15 ***	1.17 ***	NA	-0.10	0.23	5.89	0.16	0.10 ***
Luxemb.	-1136.78 *	277.02 *	1.03 *	-27.23 *	2.17 **	0.47	6.29	-13.54	6.57	0.64	-1.61	6.75	-0.20 **
Mexico	-49.06 ***	8.55 ***	2.03 ***	-0.07	0.39 ***	-2.63 ***	0.00	4.97	0.12	0.17	0.76 **	0.74 **	0.11 ***
Netherl.	-32.65 **	4.47 *	1.93 ***	-3.15 *	1.07 ***	0.47	1.20 **	5.37	0.67 **	0.07	0.69 *	-1.00	-0.03 **
New Zeal.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Norway	-118.28	17.97	5.57 ***	13.92	3.08 **	-3.65	0.22	-9.55	0.51	16.97	NA	NA	-0.16 **
Poland	-40.06 **	6.58 *	1.81 ***	-1.61	0.45	-0.81	1.12 **	-1.98 ***	0.37	1.29 *	NA	NA	0.11 **
Portugal	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Slovakia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Spain	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sweden	-52.35 ***	7.51 ***	2.05 ***	5.47 ***	1.71 ***	-0.79 *	0.12	8.58	0.80 ***	-0.93 *	7.73	-7.28	-0.02
Switzerl.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Turkey	-52.05 ***	9.60 ***	1.22 ***	-10.66 ***	0.53 ***	-0.88 ***	0.36	1.00 ***	0.84 ***	-0.16	-0.13	0.04	NA
UK	7.59	-2.62	1.69 ***	5.21	0.44	-1.14 **	0.23	4.22	0.89 ***	0.23	2.03 ***	0.57	0.03
USA	-66.52 *	5.98	2.28 ***	15.21	1.10 *	3.10	1.35	6.45	2.07 ***	-0.60	7.29	0.48	-0.03

Table 7.6 (above) shows the results of the probit analysis for the probability of an FDI inflows relationship occurring in the individual country analysis, while table 7.7(below) shows the marginal effects of the independent variables on the dependent variable for this analysis. Similarly to the FDI outflows analysis, the most significant variables in the individual country analysis is the *GDP and trade openness* for the FDI inflows sending country which is the same as the FDI outflows receiving country in the previous case. The macroeconomic variables aren't the best examples for interpretation because they should be ideally considered on a case by case basis i.e. for each observation. The marginal effects are considered for an average value of each country. Therefore, countries with different GDP are put together in the same interpretation as countries with high GDP. It makes a great difference if the countries with a smaller GDP double it in amount as opposed to countries with an already high GDP. This is why the marginal effects of the GDP for a probit analysis like this one are better suited if they are considered for individual bilateral country pairs.

From the other variables, *the physical distance* and shared economic and political organisation variable are predominantly significant with the other variables being only sporadically significant. On a country by country basis, *the shared economic and political organisation variable* seems to make a great difference in the probability whether two countries will be engaged in an FDI relationship. Considering this variable, it will increase the probability of FDI for Ireland by 19%, for Hungary by 20%, for US and Sweden by 12% and Turkey and the Czech Republic by 10%. *Sharing a legal system origin* with a country will increase the FDI probability by 24% for Denmark and Iceland. They have a Scandinavian legal system origin which indicates that their FDI inflows are mostly from its fellow countries with this type of system. The *cultural distance index* continues to show negligible effects on the probability of having an FDI relationship with another country.

Table 7.7. Marginal effects of the independent variables on the dependent variable - FDI inflows

Dependant variable is a binary choice with 1 if there is an FDI inflows relationship between country i to j at time t The FDI inflows are from the FDI sending country towards the FDI receiving country. The explanatory variables are: Log of the GDP of the FDI receiving country; log of the GDP for the FDI sending country; trade openness (ratio of exports plus imports over GDP) for the FDI receiving country; trade openness (ratio of exports plus imports over GDP) for the FDI sending country; the log of the physical distance between the country i and j in kilometres; shared continent dummy (value of one if the two country i and j are one the same continent); shared border dummy (value of one if country i and j share a border); shared economic or political organisation dummy (value of one if country i and j share membership in the same economic or political organisation); same legal origin dummy (one if country i and j share the same origin of their legal systems); shared language (one if country i and j share the same official language or language of the minorities); shared history (one if country i and j share history with respect to having had a past colonial relationship or having been part of the same country); cultural distance index (Kogut and Singh, 1988). NA stands for not available; insig. stands for statistically insignificant variable;

	LGDP of FDI rec. country	LGDP of FDI send country	Openness rec. country	Openness of send. country	L distance	Same Cont.	Shared Border	Econ. Organs. Dummy	Legal origin dummy	Shared History	Shared Lang.	CD index
Australia	Insig.	Insig.	Insig.	Insig.	Insig.	Insig.	Insig.	Insig.	Insig.	Insig.	Insig.	Insig.
Austria	Insig.	0.27	Insig.	0.11	-0.33	Insig.	Insig.	Insig.	Insig.	Insig.	Insig.	-0.02
Belgium	Insig.	0.26	Insig.	Insig.	Insig.	Insig.	Insig.	Insig.	Insig.	Insig.	Insig.	Insig.
Canada	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Czech R.	Insig.	0.22	Insig.	0.10	-0.36	Insig.	Insig.	0.10	Insig.	Insig.	Insig.	-0.02
Denmark	-3.52	0.23	Insig.	0.19	0.38	Insig.	Insig.	Insig.	0.24	NA	NA	Insig
Finland	Insig.	0.14	0.48	0.09	Insig.	Insig.	Insig.	0.07	Insig.	Insig.	Insig.	Insig.
France	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Germany	Insig.	0.28	0.39	0.14	Insig.	0.18	Insig.	Insig.	-0.28	Insig.	Insig.	Insig.
Greece	Insig.	0.30	Insig.	0.17	-0.34	Insig.	Insig.	0.15	Insig.	NA	NA	Insig
Hungary	1.76	0.20	Insig.	0.13	-0.16	Insig.	Insig.	0.20	Insig.	Insig.	NA	Insig.
Iceland	Insig.	1.12	Insig.	0.25	Insig.	Insig.	NA.	Insig.	0.24	NA	NA	NA
Ireland	1.27	0.33	-1.00	0.13	-0.27	-0.36	NA	0.19	Insig.	Insig.	Insig.	Insig.
Italy	Insig.	0.27	Insig.	0.39	Insig.	Insig.	Insig.	0.12	Insig.	NA	Insig.	Insig.
Japan	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Korea	0.48	0.37	Insig.	0.28	0.27	0.27	NA	Insig.	Insig.	Insig.	Insig.	0.02
Luxemb.	Insig.	Insig.	Insig.	0.12	Insig.	Insig.	Insig.	Insig.	Insig.	Insig.	Insig.	-0.01
Mexico	1.58	0.38	Insig.	0.07	0.49	Insig.	Insig.	Insig.	Insig.	0.14	0.14	0.02
Netherl.	Insig.	0.24	Insig.	0.13	Insig.	0.15	Insig.	0.08	Insig.	Insig.	Insig.	-0.004
New Zeal.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Norway	Insig.	0.27	Insig.	0.15	Insig.	Insig.	Insig.	Insig.	Insig.	NA	NA	-0.007
Poland	Insig.	0.20	Insig.	Insig.	Insig.	0.125	-0.22	Insig.	Insig.	NA	NA	0.01
Portugal	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Slovakia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Spain	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sweden	1.05	0.29	0.77	0.24	Insig.	Insig.	Insig.	0.12	Insig.	Insig.	Insig.	Insig.
Switzerl.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Turkey	1.08	0.14	-1.20	0.06	-0.10	Insig.	0.12	0.10	Insig.	Insig.	Insig.	NA
UK	Insig.	0.20	Insig.	Insig.	-0.13	Insig.	Insig.	0.11	Insig.	0.24	Insig.	Insig.
USA	Insig.	0.13	Insig.	Insig.	Insig.	Insig.	Insig.	0.12	Insig.	Insig.	Insig.	Insig.

7.4. Conclusion

FDI flows can be of great economic, political and technological importance for many countries. What the countries can do is increase their familiarity and reliability in the eyes of investors abroad via the institutional and cultural factors. The reliability of the institutions and their closeness to an international benchmark such as a membership to an economic or a political organisation or an alignment of the legal aspects of investment to international standards increases the probability of FDI flows. The same is true for cultural familiarity. If the countries make the investment process more familiar in terms of language and customs they would increase their FDI flows. Increasing the institutional familiarity by joining an international economic or political union will increase the probability of having FDI inflows by 13%. Cultural proximity factors increase the probability of FDI inflows and outflows by 14% in the case when countries share history. Shared language increases the probability of having an FDI inflows relationship with another country by 15%. The shared history is important for FDI inflows is Europe and it will increase the FDI outflows relationship with another country by 13% and a shared language will increase them by 10% while a shared language in European inflows increases this probability by 14%. The shared history is a very prominent factor for the outflows and inflows in Asia-Pacific and it will increase the probability of having an FDI relationship by 15% for FDI outflows and 21% for FDI inflows while sharing a language will increase the FDI inflows probability by 23%. The shared history is a very prominent factor for the Asia-Pacific region. These cultural factors play a big role in increasing the probability of FDI inflows relationship for America. A shared history will increase it by 17% and a shared language by 15%. The country results are varied but a shared economic or political organisation membership is overall a very important factor and increases the probability of having an FDI relationship.

The country size and openness to trade are confirmed to be a significant predictor of FDI flows among countries as are the geographical proximity factors. The results are very strong and consistent in the full panel and regional continent analyses with the individual country analysis being less consistent mainly due to data limitations. However, in terms of increasing the probability, when the averages of these variables are high, it will take a great increase in the values of these variables for the probability of FDI to really move up. That's because once there is a certain level of macroeconomic factors attained, the probability of FDI flows between two countries depends on other, more institutional factors such as the membership to the economic or political organisations.

Limited as the country analysis may be, it conclusively points out to the importance of institutional familiarity which can be used by countries to increase the probability that they will have FDI inflows in general as well as an above average amount. For example a shared membership to an international organisation increases the probability that there will be a significant FDI flows for smaller and more remote European countries such as Iceland, Ireland or Denmark. The institutional factors also help the probability of a positive FDI flow for more emerging countries of the OECD members such as Turkey, Czech Republic or Hungary. This in addition to the country openness is something that can be influenced relatively easily whereas the other determinants such as the geographic location can't be changed.

8. Thesis Conclusion

8.1. Introduction

The impact of the human factor in the economic decisions is nothing new. Clark (1918) has stated that economists may attempt to ignore psychology but it is impossible to ignore human nature. All investments are carried out by people who are shaped by their own individual sets of cultural and moral traits, location and institutional preferences and familiarity, which shouldn't be ignored when we examine their investment decisions. This thesis contributes to the understanding of FDI determinants and corporate decision making by incorporating human behaviour. I contribute by integrating behavioural finance notions and implementing them in an FDI context. I contribute to the literature by showing that corporate managers herd and prefer to invest in familiar locations in their decision on FDI. I further contribute to the FDI literature by testing institutional, cultural, geographical and macroeconomic determinants in a very broad, bilateral country pair setting using a large dataset. I contribute by investigating near-home bias and herding in FDI flows and provides generality of the results at a global, regional and country levels, over time and across different country income groups. I also contribute to the FDI policy literature by quantifying the effect of FDI determinants on the probability that two countries will have an FDI relationship. The use of the entire OECD dataset on FDI flows is a novel application of this dataset for the purpose of studying near-home bias and herding in FDI.

The main finding of this thesis is that home country bias and herding can also be observed in FDI flows and not only in equity markets. I find empirical evidence for near-home bias in FDI flows at a global level. Near-home bias is also observed both in general and throughout geographically different regions, across time and in various country income groups. I find that near-home bias has not diminished over time. I find that there is herding in FDI outflows in

several contexts: FDI investors herd around a world and a regional leader when they don't have familiarity factors to rely upon; portfolio investors herd FDI investors with a lag of (at least) two years and current regional FDI investments herd FDI investors from other countries in an FDI host country. Finally, I quantify probability impact of the near-home bias factors in a binary dependant variable model and consider them from a country policy perspective. I find that apart from macroeconomic variables, the institutional and cultural familiarity significantly increases the probability that there will be positive FDI flows between two countries that otherwise might not have an FDI relationship. The findings in this thesis which are done on FDI flows are consistent with the findings in the behavioural finance literature which is conducted for the equity markets and international flows.

The following sections go over the main findings and contributions for the individual empirical analyses in this thesis. They follow the previously established structure of the chapters. I conclude with a discussion on the limitations of this thesis and the possible directions for further research of these issues.

8. 2. Near-home bias in FDI flows

The analysis in chapter 4, investigates near-home bias in foreign direct investments using data on the FDI outflows and inflows of the 30 OECD countries and their FDI partners for the period 1981-2005.

The results show that corporate investors prefer destinations that are familiar with and they prefer to invest in countries that they share a border with. Physical proximity is an indicator of familiarity because countries that are closer to each other tend to have similar features their cultures and business environments. Direct investors also prefer to invest in countries with similar economic and legal systems to their own. Institutional similarities are important indicators for business climate familiarity. A commonly spoken language between the host and source countries, low cultural distance and a shared history play a big role in

corporate decisions regarding FDI. These physical, institutional and cultural groups of factors create a near-home bias in the FDI flows in the world.

8.3. Segmented Analysis of Near-home bias in FDI flows

This stratified analysis of FDI flows shows that there is home country bias at regional and country levels, across time and various income country groups. The geographic analysis confirms the general panel results from the previous analysis with the continent analysis offering much stronger evidence of near-home bias and the country analysis having greater specificity across countries. Near-home bias in FDI flows is found to be present across different continental regions without exception. The individual country analysis is more varied and shows stronger evidence of near-home bias for the more developed countries in the OECD.

The time sub-period analysis splits the sample in two consistent with the capital market liberalisation period. One of the main logical reasons why we would observe this proneness from direct investors to near-home bias is the fact that there were many obstacles in the equity markets. If this is true then we should also observe its effects lessen over time. The capital market liberalisation in the past twenty years should have had a negative effect on the near-home bias effects in the equity markets if one considers that barriers to investments are the main cause for near-home bias. I do not find supporting evidence that the home country bias has diminished over time.

Finally, FDI flows to countries of different income groups for different reasons. It can be observed that the home country bias is persistent across different country income groups. One might expect that there should be greater near-home bias when it comes to the low income or developing countries because this is also associated with greater risk and increased costliness of doing business in such places. I do not find that the near-home bias effect has subsided for

rich countries or that it is more pronounced in low income countries but instead can be observer throughout. The direct investments outflows into high-income countries are strongly prone to institutional and cultural familiarity and proximity. The same can be observed for low-income countries.

8.4. Herding in FDI flows

I test for herding in the context of the difference in investment amount from a world and regional leaders and through the influence of the portfolio equity investments and total regional direct investments in different time periods. There is supporting evidence for herding in FDI outflows at an aggregate and regional level.

First, I find that the difference in the amount invested from a world or a regional leader falls when companies don't have other factors of economic activity or familiarity. In such cases they follow the investment pattern of the world leader, the US or the regional leaders, the UK and Japan. This finding is consistent also with the home country bias findings.

Second, there is evidence that FDI investors are, among other factors, prone to choose an investment location with a high portfolio equity investment activity after two years. That means that it takes two years for direct investment to be generated from an increased activity in the equity markets. Finally I find inconclusive evidence that suggests that increased FDI investments from the neighbourhood into one country will encourage the country to also choose that country as an FDI destination.

Overall, I can conclude that when investors consider unfamiliar territories, companies choose to follow the investments made by a world or a regional leader as a signal for an investment destination. This finding also suggests that the effects of herding in FDI are

secondary to the effects of near-home bias which guides investments according to several familiarity factors.

8.5. Predicting the probability of FDI flows

FDI flows can be of great economic, political and technological importance for many countries. What the countries can do is increase their familiarity and reliability in the eyes of investors abroad via the institutional and cultural factors. The reliability of the institutions and their closeness to an international benchmark such as a membership to an economic or a political organisation or an alignment of the legal aspects of investment to international standards increases the probability of FDI flows. I find that the institutional and cultural proximity between two countries has the greatest impact on the probability of two countries having positive FDI flows. Increasing the institutional familiarity by joining an international economic or political union will increase the probability of having FDI inflows by 13%. Cultural proximity factors increase the probability of FDI inflows and outflows by 14% in the case when countries share history. Shared language increases the probability of having an FDI inflows relationship with another country by 15%. The shared history is important for FDI inflows is Europe and it will increase the FDI outflows relationship with another country by 13% and a shared language will increase them by 10% while a shared language in European inflows increases this probability by 14%. The shared history is a very prominent factor for the outflows and inflows in Asia-Pacific and it will increase the probability of having an FDI relationship by 15% for FDI outflows and 21% for FDI inflows while sharing a language will increase the FDI inflows probability by 23%. The shared history is a very prominent factor for the Asia-Pacific region. These cultural factors play a big role in increasing the probability of FDI inflows relationship for America. A shared history will increase it by 17% and a shared language by 15%. The country size and openness to trade are confirmed to be a significant predictor of FDI flows among countries as are the geographical proximity factors. The results

are strong and consistent in the full panel and regional continent analyses with the individual country analysis being less consistent mainly due to data limitations.

8.6. Limitations and future research

This thesis shows empirical evidence that there is near-home bias and herding in FDI flows at a country level. The majority of available data on FDI when it comes to many countries in the world come as country level data which is also a drawback. This means that we cannot see the differences across industries as well as additional information that would come from having firm level data. The application of this analysis on industry and firm level data emerges as a natural extension to the analysis in this thesis. The industry differences in FDI would be a crucial addition to the near-home bias and herding analysis. At present, the OECD industry datasets are one-sided i.e. the FDI position is only recorded as an aggregate to and from OECD member countries instead of in a bilateral way like the rest of the data used in this thesis. This prevents any analysis into the research questions in this thesis across industries. I am convinced that this type of analysis would become available in the future as it becomes technologically easier for countries to record and provide data. The importance of this industry divided analysis comes from the different type of direct investments. As discussed in the literature review on the FDI theories, the motivation for the expansion of a multinational enterprise can vary from resource-seeking investments, to market expanding investments. Some multinational companies don't have much choice regarding the location of the FDI host country. They are resource-oriented and dependent. A European company that manufactures coffee for example cannot choose to buy a plant in a near-by European country simply because the coffee plantations are located predominantly in Africa or Latin America. Therefore, the near-home bias that a company from this industry would exhibit isn't likely to be affected by physical proximity but rather more towards institutional or cultural familiarity. Conversely, an international company in the financial services industry would probably elect

to invest in the near-by markets with greater institutional convenience and similarity as well as physical proximity. This industry type of distinction of FDI will have implications for any future herding analysis as well as home country bias research regardless whether the data are bilateral or unilateral aggregate country level.

This thesis looks into near-home bias and herding in positive FDI flows. These flows occur between two countries and this thesis captures the common features between the two countries in an FDI relationship and what determines and predisposes this relationship once an FDI flow is made. It cannot discern whether that FDI decision was profitable or not. The financial aspect of the corporate decision to make a particular FDI should be a target for future research. The very nature of the FDI statistics provided by the OECD does not provide any information on the profitability of the investments but rather on the amount of the FDI inward or outward positions that a country has with another country. Also, adding firm-related financial data to a dataset of this size and scope is very difficult to say the least. The financial aspects both from a traditionally financial and a behavioural finance point of view would further develop the FDI literature which at present, in my view, isn't integrated enough with the finance literature. In the past this was mostly due to the fact that FDI was a long-term and infrequent investment. But the world is far more developed and FDIs are increasing in both volume and frequency. Inevitably, this leads to largely the same issues that equity markets investors face. There is another behavioural finance phenomenon that has to do with investment remorse which would be ideally suited with studying the profitability aspects of the corporate FDI decisions that are also a consequence of near-home bias and herding. Ideally, firm level data would add this financial aspect to the analysis and it would be possible to test the implications on profitability of the investment choices for FDI made by the MNEs.

The analysis in this thesis shows evidence of near-home bias across country pairs which are considered to be the source and final host of the FDI investment. The data are at

country level and don't show any other owners which could link other countries in an FDI relationship. Therefore, another limitation and basis for future research can be derived from the nature of this data and comes from the definition of a host (or investing) country. As noted in the FDI definition section in chapter 2, there are two possible ways to consider an FDI position, by immediate host country and by ultimate host country. This distinction should be required by the data providers and introduced in the future editions of the databases in order to account for the increased complexity of the FDI ownership structure in current times. The OECD benchmark requirement is for countries to provide the immediate host or investing country (depending on the inward/outward FDI position in question) with additional information on the ultimate host or investing country where possible. These types of data are unavailable at present and would provide a solid base for future expansion of the research questions in this thesis. An example of this is the investment patterns into Eastern Europe for example. The German Telecom first started expanding in the proximate and neighbouring Hungarian market and subsequently and indirectly continued expansion when the Hungarian telecom (owned by the German Telecom) made further acquisitions in the more proximate and familiar markets in the Balkans. In the current framework these FDI would be considered on individual basis and there is evident presence of home country bias in this example but a further analysis through knowing the original and ultimate source of the investment will help discern the influence in corporate finance decision and managerial style between various countries and the relationship between multinational companies that are connected and inter-linked through FDI.

The analysis of herding in this thesis involves a dependent variable that calculates the difference in direct investment from a world (USA) and regional leaders (UK and Japan). Further work in this area could be extended to include an additional analysis by bringing the leaders' FDI outflows into country j (as defined in chapter 6) on the right-hand side of the

regression equation. This exercise would also represent a proxy for herding in FDI by following a perceived market leader. A statistically significant variable of the market leader would indicate that there is herd behaviour from the rest of the investors in county j and how does the world or regional FDI leader investment behaviour impact the rest of the direct investors' behaviour regarding FDI in the receiving country. This type of analysis would also include the leaders' FDI flows at different lags which in turn would complement the analysis in chapter 6 that includes portfolio equity flows. This analysis shows that there are at least two years of time difference between an increased portfolio investment activity in the home market followed by an increased FDI activity. Using regressors of the market leaders in different time periods would either confirm or show the difference in this type of herd behaviour.

The analysis of near-home bias in this thesis includes fundamental macroeconomic variables such as the country's GDP and its openness. These two variables are most commonly used in FDI studies using a gravity model. A possible extension to this analysis would be to include an additional variable: Gross Domestic Fixed Capital. These data include the domestic investment in productive assets such as buildings and equipment and does not include investment in financial assets and stock. The Feldstein-Horioka puzzle shows that there is a positive correlation between domestic saving and domestic investment even when there is good capital mobility in the international markets. Using this type of data would connect the home bias puzzle with the Feldstein-Horioka puzzle and determine what portion of the perceived home bias can be explained through the retained home investment, something which is studied by the Feldstein-Horioka puzzle. These two are some of the very well documented puzzles in international economics and finance and it might be the case that there are some common features between them which would help explain or reduce the degree of the observed biases.

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Appendix

Complete list of countries that can be found in at least one country pair in the dataset

COUNTRY CODE	COUNTRY NAME	CONTINENT LOCATION
ALB	Albania	Europe
DZA	Algeria	Africa
AGO	Angola	Africa
ATG	Antigua and Barbuda	America
ARG	Argentina	America
ARM	Armenia	Asia
AUS	Australia	Pacific
AUT	Austria	Europe
AZE	Azerbaijan	Asia
BHR	Bahrain	Asia
BGD	Bangladesh	Asia
BRB	Barbados	America
BLR	Belarus	Europe
BEL	Belgium and Luxembourg	Europe
BLZ	Belize	America
BEN	Benin	Africa
BTN	Bhutan	Asia
BOL	Bolivia	America
BIH	Bosnia and Herzegovina	Europe
BWA	Botswana	Africa
BRA	Brazil	America
BRN	Brunei Darussalam	Asia
BGR	Bulgaria	Europe
BFA	Burkina Faso	Africa
BDI	Burundi	Africa
KHM	Cambodia	Asia
CMR	Cameroon	Africa
CAN	Canada	America
CPV	Cape Verde	Africa
CAF	Central African Republic	Africa
TCD	Chad	Africa
CHL	Chile	America
CHN	China	Asia
COL	Colombia	America
COM	Comoros	Africa
COG	Congo	Africa
CRI	Costa Rica	America
CIV	Cote d'Ivoire	Africa

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HRV	Croatia	Europe
CYP	Cyprus	Europe
CZE	Czech Republic	Europe
DNK	Denmark	Europe
DJI	Djibouti	Africa
DMA	Dominica	America
DOM	Dominican Republic	America
ECU	Ecuador	America
EGY	Egypt	Africa
SLV	El Salvador	America
GNQ	Equatorial Guinea	Africa
ERI	Eritrea	Africa
EST	Estonia	Europe
ETH	Ethiopia	Africa
FJI	Fiji	Pacific
FIN	Finland	Europe
FRA	France	Europe
PYF	French Polynesia	Pacific
GAB	Gabon	Africa
GMB	Gambia	Africa
GEO	Georgia	Asia
DEU	Germany	Europe
GHA	Ghana	Africa
GRC	Greece	Europe
GRD	Grenada	America
GTM	Guatemala	America
GIN	Guinea	Africa
GNB	Guinea-Bissau	Africa
GUY	Guyana	America
HTI	Haiti	America
HND	Honduras	America
HKG	Hong Kong	Asia
HUN	Hungary	Europe
ISL	Iceland	Europe
IND	India	Asia
IDN	Indonesia	Asia
IRN	Iran	Asia
IRL	Ireland	Europe
ISR	Israel	Asia
ITA	Italy	Europe
JAM	Jamaica	America
JPN	Japan	Asia
JOR	Jordan	Asia
KAZ	Kazakhstan	Asia
KEN	Kenya	Africa

KIR	Kiribati	Pacific
KOR	Korea	Asia
KWT	Kuwait	Asia
KGZ	Kyrgyzstan	Asia
LAO	Lao People's Democratic Republic	Asia
LVA	Latvia	Europe
LBN	Lebanon	Asia
LSO	Lesotho	Africa
LBR	Liberia	Africa
LBY	Libyan Arab Jamahiriya	Africa
LTU	Lithuania	Europe
LUX	Luxembourg	Europe
MKD	Macedonia	Europe
MDG	Madagascar	Africa
MWI	Malawi	Africa
MYS	Malaysia	Asia
MDV	Maldives	Asia
MLI	Mali	Africa
MLT	Malta	Europe
MRT	Mauritania	Africa
MUS	Mauritius	Africa
MEX	Mexico	America
MDA	Moldova	Europe
MNG	Mongolia	Asia
MAR	Morocco	Africa
MOZ	Mozambique	Africa
NAM	Namibia	Africa
NPL	Nepal	Asia
NLD	Netherlands	Europe
NZL	New Zealand	Pacific
NIC	Nicaragua	America
NER	Niger	Africa
NGA	Nigeria	Africa
NOR	Norway	Europe
OMN	Oman	Asia
PAK	Pakistan	Asia
PAN	Panama	America
PNG	Papua New Guinea	Pacific
PRY	Paraguay	America
PER	Peru	America
PHL	Philippines	Asia
POL	Poland	Europe
PRT	Portugal	Europe
ROM	Romania	Europe
RUS	Russian Federation	Asia

RWA	Rwanda	Africa
KNA	Saint Kitts and Nevis	America
LCA	Saint Lucia	America
VCT	Saint Vincent and the Grenadines	America
WSM	Samoa	Pacific
SAU	Saudi Arabia	Asia
SEN	Senegal	Africa
SYC	Seychelles	Africa
SLE	Sierra Leone	Africa
SGP	Singapore	Asia
SVK	Slovakia	Europe
SVN	Slovenia	Europe
SLB	Solomon Islands	Pacific
ZAF	South Africa	Africa
ESP	Spain	Europe
LKA	Sri Lanka	Asia
SDN	Sudan	Africa
SUR	Suriname	America
SWZ	Swaziland	Africa
SWE	Sweden	Europe
CHE	Switzerland	Europe
SYR	Syrian Arab Republic	Asia
TJK	Tajikistan	Asia
TZA	Tanzania	Africa
THA	Thailand	Asia
TGO	Togo	Africa
TON	Tonga	Pacific
TTO	Trinidad and Tobago	America
TUN	Tunisia	Africa
TUR	Turkey	Europe
TKM	Turkmenistan	Asia
UGA	Uganda	Africa
UKR	Ukraine	Europe
ARE	United Arab Emirates	Asia
GBR	United Kingdom	Europe
USA	United States of America	America
URY	Uruguay	America
UZB	Uzbekistan	Asia
VUT	Vanuatu	Pacific
VEN	Venezuela	America
VNM	Viet Nam	Asia
YEM	Yemen	Asia
ZMB	Zambia	Africa
ZWE	Zimbabwe	Africa

CONTINENT	NUMBER OF COUNTRIES	PERCENTAGE
Europe	39	22%
Americas	33	19%
Africa	50	29%
Pacific	10	6%
Asia	42	24%
Total	174	100%