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Foreign Direct Investment (FDI) and the Liberalization of Trade in Services: An Evaluation of the Euro-Mediterranean Partnership (EMP)Influence

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Directed By
Joan Costa Font & Mireia Borrell Porta, The London School of Economics and Political Science, United Kingdom

Contributors:

Joan Costa Font & Mireia Borrell Porta, The London School of Economics and Political Science, United Kingdom
Lior Herman & Alfred Tovias, Hebrew University, Israel

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Report:

Foreign Direct Investment (FDI) and the Liberalization of Trade in Services: An Evaluation of the Euro-Mediterranean Partnership (EMP) Influence

Mireia Borrell Porta (LSE)

Joan Costa Font (LSE)

Lior Herman (Hebrew University)

Alfred Tovias (Hebrew University)

EXECUTIVE SUMMARY

Foreign direct investment is argued to result from the liberalisation of trade, and we are set to examine whether this is especially the case of trade in services. Mediterranean Non Member Countries (MNMCs) offer a paramount case study to explore this hypothesis given its diversity and the fact that all have received equivalent institutional dimension in the context of the Euro Mediterranean Partnership (EMP). There is a growing literature emphasising the role of FDI in economic growth and many authors point at FDI as a key factor that could improve the poor results of the Euro-Mediterranean Association Agreements (EMAAs). At the same time, the literature also highlights the important contribution of services in economic growth. Existing research has already pointed out that the lack of trade in services liberalisation in the EMAAs has been a root cause in the EMAAs' failure to facilitate trade (World Bank 2003; Muller-Jentsch 2005; Tovias, Kalaycioglu et al. 2007; Hoekman and Özden 2010; Galal and Hoekman, 1997; Sadeh 2004; European Commission 2005, Lahouel 2001).

This project evaluates the effect that liberalization of trade in services by Mediterranean Non Member Countries (MNMCs) plays in boosting (or not) FDI levels. Drawing from identifying stylised patterns and economic evidence from gravity modelling, we have attempted ***to empirically test the existence of an association between liberalization of trade in services and the development of FDI***, therefore placing liberalization of trade in services at the top of the Euro-Mediterranean agenda in order to foster FDI, enhance world transactions and ultimately boost economic growth. The main reason for this is that the Mediterranean partner country becomes a place where it is easier and more attractive to do business. Given significant barriers to trade in services prevailing in the MNMCs (e.g., exchange rates, duties etc.), as well as the relative low levels of FDI relative to other European regions, this analysis and its results are of utmost importance for the future of

the EMP. Given that building a counterfactual is a complex duty, we compare patterns of MNMCs with that of Central and Eastern European Countries. The relevance of such a comparison lies in that similarly as in the case of MNMCs; the Europe Agreements signed in the 1990s included a degree of liberalization of trade in services in the form of adoption of rules of establishment of foreign firms.

The main results are the following: trade in services has been proved to impact positively and significantly on FDI in the CEECs and MNMCs. This has been corroborated by robustness checks which tested the methodology used, the treatment of the dependent variable, as well as come potentially sources of endogeneity. At the same time, in the report has confirmed the importance of standard gravity model specification such as GDP and distance, in explaining FDI.

Finally, data limitations have prevented us to be more concise about the average impact of trade in services in FDI, and it has only allowed us to conclude for the few MNMCs (aside from most CEECs) that had available data on trade in services, which are Egypt, Morocco and Israel. Moreover, we have not been able to discern the impact of different types of trade in services on FDI, since disaggregated trade in services data is not available neither. More work on database and methodology needs to be done in order to have reliable data and quantify in a more accurate way the relevance of trade in services and FDI.

Relevant policy implications have been drawn from the above-mentioned conclusions, concerning the effectiveness of existing EU policies towards the MNMCs, which suggest the role that a free trade area can exert in fostering the development of foreign direct investment to the region.

Keywords: trade liberalisation, foreign direct investment, MNMCs, central and Eastern European countries, gravity models.

Table of contents

FIGURES INDEX

TABLES INDEX

I. INTRODUCTION

A common feature of processes of economic integration lies in the enhancement of trade integration, which arguably gives rise to direct investment, and in turn to other deeper sources of integration. The enlargement of the European Union stands as an example of such a phenomenon. However, today, even when the economic design of the European project is subject to redefinition, Europe is an integrated area on many grounds including a single market, currency and a common set of institutions. Nonetheless, the Europeanisation process does not end in Europe itself, but instead does exert important influences in countries that share common spaces with other European Union member states, as it is the case of the Mediterranean.

Processes of economic integration, such as observed in Europe, appear to indicate that the development of trade-enhancing institutions positively affects both the economies within Europe and the local foreign economies with which agreements are signed. This hypothesis was confirmed by trade Agreements that the EU previously signed with other countries (e.g. EFTA, Europe Agreements). In this context the EU opened up the door for the Euro-Mediterranean Partnership (EMP), a partnership with MNMCs based on Bilateral Association Agreements which would provide the pace for liberalization of trade until reaching a Free Trade Area. From then on, trade has increased between the two regions and large social and political changes have taken place. Yet, the expectations held by some actors have not been fulfilled, and the EMP, far from confirming the positive effects of trade-enhancing institutions on economic exchange, has been rather a proof that removing tariff-barriers on trade in goods has not been and is not sufficient. It was, actually, also for this reason among others that the idea of launching a new neighborhood policy – the European Neighborhood Policy (ENP) toward the EU's Mediterranean partner countries crystallized in 2003. On the one hand, the success of enlargement seemed undeniable. It was perceived as successful reform, including in the realm of trade in services and FDI. On the other hand, it was thought then that with the future accession of Cyprus, Malta, and Turkey to the EU, the number of Mediterranean partners to the EMP would diminish from twelve to nine, of which eight were middle-income Arab economies and that from then on

the Southern neighborhood of the enlarged EU would be made up only by MENA countries (with the exception of Israel). The ENP also reflected the EU's unofficial conviction that any EU enlargement tends to have destabilizing consequences for excluded countries via trade and investment diversion. Countries particularly concerned were those whose export patterns to the EU overlap with those of the new members. Most of the concerned countries were in the (new) neighborhood. Therefore the ENP can also be taken as reflecting the intention of the EU to reverse these unwanted effects of the 2004 and 2007 enlargements. The method used to obtain the goal of reversing such trends was to be "deep integration." To move those neighbors (including the southern ones) from shallow to deep economic and regulatory integration, the European Commission suggested offering them benefits "previously associated only with membership." Among the benefits cited from the inception of the ENP, one deserved particular attention: "a stake in the internal market", in the case of Mediterranean neighbors, the ENP was and is still to be taken as a supplement to the EMP (which has not disappeared in spite of the creation of the UfM; see later), not as a substitute, as it simply adds incentives framed in a context of positive conditionality and reflects a more active engagement of the EU. The EU Commission uses the slogan "a stake in the internal market" ad nauseam in all relevant documents of the ENP, though curiously, the term "stake" has not been clearly defined in any official text. It is apparently understood as a substantial reduction of barriers by partners to trade agreements, a progressive but selective integration into aspects of the internal market (IM). In the eyes of the Commission it is a step-by-step approach. This approach has been somewhat marginalized in the ENP package since 2003 when it was popularized by the president of the Commission at the time, Romano Prodi, in favor of other items, such as people-to-people contacts. One of the reasons for this has been, according to an EU Commission official interviewed by one of the authors' of this report (which did not want to be quoted), the difficulty in persuading the relevant commissioners and directorates besides those dealing with the external relations that opening the IM to the Mediterranean partners is desirable for the EU. Another official said in an unofficial interview that "a stake in the internal market" is a long-term objective that bears the question of how long the long term is. The Commission has been saying that most actions were to be expected in the domain of goods,

but less so in services and freedom of establishment. Labor movements have been practically left out from the beginning. True enough; the EU says all the time that it wants to negotiate bilaterally with the Mediterranean neighbors' trade liberalization in services. However, it mentions almost exclusively financial services, in which Mediterranean countries do not seem to have much comparative advantage. In terms of the General Agreement on Trade and Services (GATS) supply modes, the Mediterranean partners seem to have a comparative advantage in Mode 2 (consumption abroad) and Mode 4 (movement of natural persons), a feature typical of middle-income developing countries. The distribution of supply modes in the world trade in services is actually skewed against these two modes. Shares in world trade in services are as follows: Mode 1, 25 percent; Mode 2, 15 percent; Mode 3, 60 percent; Mode 4, 2 percent. The EU Commission's narrative (as evidenced in the ENP website) has been that integration in the internal market would have to take into account the capacity and interests of both sides. It has time and again been stated explicitly that the "free movement of persons is not in the agenda for the foreseeable future." However, this does not explicitly exclude the "temporary movement of people" within Mode 4 of GATS. If the EU offer at the Doha Round serves as an indication, Mediterranean neighbors should be optimistic that Mode 2–related concessions will be obtained In the future from the EU. They should be less optimistic regarding Mode 4, but the Mediterranean countries would have more opportunities if they negotiate with individual member states.

What is important for the Mediterranean partners and the EU member states alike is to realize that the advantage of eliminating non-trade barriers (NTBs) on a preferential basis rather than tariffs in mutual trade is that trade diversion against third countries is not welfare-reducing and that NTBs are not revenue-raising but cost-increasing. Therefore, the offer of the EU can only be welfare-enhancing for both partners, if we discount the short-term costs of adjustment. To take care of the latter, Mediterranean partners could ask the EU to reduce NTBs on their exports to the EU and apply strict reciprocity only in the medium and long run.

Not surprisingly, a country such as Morocco has repeatedly stated that it wants "more than association, less than membership" with the EU. Together with Jordan and Tunisia,

Morocco has demonstrated on more than one occasion that it has no patience with the stagnating, simple free trade area relations imposed by the EMP in 1995. Nor does Morocco want to wait until other laggard Arab countries start implementing their FTA Association Agreement or are not already in an advanced state of implementation. The focus on the need for more market reforms in the Mediterranean neighbors is not always justified. It seems that in the EU the assumption is made that FDI will flow into the EU's southern neighbors the moment that they deal with their red tape, derived from the poor and inefficient provision of public services to local firms. But the difficulty that most southern Mediterranean countries have in attracting FDI does not come from administrative inefficiencies, but from the lack of human capital and know-how, which do local service providers reflect in the inefficient provision of business services[1]. This can partly be overcome by allowing for the import of human capital-intensive services from abroad.

This becomes obvious by making a comparison with India, for example. Why does India attract FDI in high-tech industry and services while MENA countries have not done so? After all, FDI flows to MENA when OECD countries need something from there (e.g. crude oil/gas), and nobody seems to be bothered by red tape. And why did not Turkey not for a very long time attracted FDI after all the reforms (including elimination of administrative hassles) it had undertaken over the years? Scholars should look thoroughly into the correlation by countries and sectors between implemented reforms and subsequent FDI flows. It seems that the empirical link is much more tenuous than what is always assumed and that the problem is more one of lack of professional competence and know-how than of red tape. What we contend in this report is that possibly, instead of focusing on administrative barriers the most significant reform to be implemented first in order to attract FDI could be the reciprocal liberalization of trade in services between the EU and Mediterranean Arab countries.

In fact, the specific incentives offered to most Mediterranean countries in the context of the ENP have not been sufficiently appealing for them to accept Europeanization. It is clear

[1] This was the gist of the line of thinking defended in a famous UNDP report on the Arab world published in 2002. See UNDP (2002). The inefficiency of domestic service providers was stressed early on in Galal and Hoekman (1997), p.152 and p. 244

that the Action Plans already in place have fallen short of expectations in most Mediterranean countries. They initially thought they would be admitted to all EU programs and that the four freedoms (freedom of movement of goods, capital, services, and persons) would soon be extended to them. Now it appears that, contrary to what the former Commission president Romano Prodi said at the time, they would not have "everything but the institutions," but rather "something, but not the institutions." Official EU documents have been speaking more and more of "a measure of economic integration" rather than "a stake in the internal market." Given the reluctance of southern European EU member states to speak about the four freedoms, the Commission had to withdraw references to them from speeches early on. In fact, there are no direct references to the four freedoms in the publication of the 2004 EU Strategy Paper and in successive documents, while they were still mentioned in the 2003 "Wider Europe" Communication from the European Commission.

With respect to services, the EU would like to start with financial services, information technology, transport, and energy. Probably with the exception of energy, these are sectors in which the Mediterranean neighbors do not have a comparative advantage. In financial services, the EU has rejected the possibility of conferring an ENP passport for financial services providers in the Euro-Med area since it would imply accepting the principle of mutual recognition. With regard to temporary migration, the jury is still out under Mode 4.

I.1. The issue of the Report

Scholars have already pointed at the lack of liberalization of trade in services as one of the main reasons for the weak outcome of the EMP (see above). The same applies to the ENP (see above) for the simple reason that what is contemplated for services there has not been implemented yet. The service sector is being thought as one that plays a core role in economic growth and this role has increased in the last two decades. In fact, the service sector has been the fastest-growing sector in the global economy in the last two decades, providing more than 60% of total output. Besides, the share of services in world

transactions has also increased substantially. In this context, liberalization of trade in services is acquiring major importance. This one has more to do with reducing the regulatory barriers to market access than with reducing tariffs and its main focus is to ensure that existing regulations do not discriminate against foreign participation in the markets. As some authors claim, its liberalization is needed to improve the efficiency of use of existing resources and to increase competition. Moreover, its liberalization is not only necessary for the service sector, but it causes spillover effects on other sectors.

At the same time, there is a growing literature providing evidence that FDI is a necessary condition for economic growth in developing countries such as the Mediterranean Countries. More specifically, FDI is regarded as a feasible solution to the trade deficit that some of those countries are experiencing, or as a factor that can promote the exploitation of latent comparative advantage in industries in which MNMCs still have a trade deficit by bringing capital, organization, technology and so forth. Moreover, it can act as a complement to the low levels of domestic direct investment. Despite its advantages, FDI levels in MNMCs have remained relatively low until recently compared to other emerging countries and the Agreements have not improved the situation. Some authors have therefore pointed at FDI low levels as another main cause for the weak outcome of the EMP (with the honourable exception of EIB loans; see Peridy and Bagoulla (2012)).

The existing literature about these is, therefore, large. The Partnership stands in need of two conditions that are proved to create economic growth: FDI and liberalization of trade in services. Nevertheless, most studies concerning the MNMCs that have been conducted up to now have analysed the causes and consequences of the two factors separately. Our aim is to analyse the relationship between those two factors: Is there a trade-off, between lack of liberalization of trade in services and FDI? This would be logical, as the more barriers a firm encounters to trade in a foreign country, the more incentives it has to overcome them, and one way to do it is to enter the foreign market[2]. Once they come into the market, they become pro-protectionism and resist further liberalisation in order to secure their first

[2] It was Mundell (1957) the first who picked up the phenomena of mutual substitutability between trade in goods and trade in production factors.

mover's advantage. There has been evidence that this has been the case in other markets, particularly in Asia. Nonetheless, other authors, who claim that there is a complementary relationship between the two factors[3], contest the logic behind the trade-off: FDI is hampered in the presence of adverse regulation concerning some modes of services provision or types of services. On the one hand, FDI can complement cross-border trade in services and the movement of labour. On the other hand, several backbone services, such as financial and telecommunication services need to be liberalized to enable greater FDI. Furthermore, harmonization and standardization of several services sectors regulation can positively affect investment.

I.2. Aims of the Report

We are therefore in front of a puzzle that boils down to the following: **Is liberalization of services positively or negatively inducing FDI in** MNMCs**? Does FDI represent the associated effect of liberalization of trade in services, as suggested above?** Insofar as trade in services is a substitute of FDI, a liberalization of service trade in Mode 1, 2 and 4 could lead to less FDI; however a liberalization of service trade in Mode 3 could lead to more FDI. In order to solve this puzzle we first need to analyse the current situation of trade in services and FDI levels in the MNMCs, which will provide us with a vision of the motivations behind the EMP and the driving forces behind it. Secondly, we need to answer the above-mentioned questions, understand the behaviour of firms, local governments and the interests they pursue and, most importantly, we need to draw policy-implications that should guide the EU and the respective countries to the appropriate path necessary to achieve economic growth.

Furthermore, given the difficulty in building a counterfactual analysis we instead rely on a comparative analysis with the CEECs as those countries also signed trade agreements with the EU but, unlike the EMP, they included some liberalization of trade in services.

[3] See e.g the FEMISE report prepared by Peridy et al.(2007) where the theoretical and empirical underpinnings justifying the complementarity of trade and factor flows are forcefully put forward.

I.3. Report Structure

The next section is devoted to the conceptual framework. It includes a literature review of the existing evidence examining determinants of FDI and trade in services and it establishes the theoretical relationship between the two variables on which we will build our empirical strategy. Section three covers the stylised facts of trade and FDI, which will shed some light on the data patterns of both variables in the studied regions and section four deals with the empirical strategy followed to analyse the relationship between the two variables. It thus focuses on data access and limitations, methodology and it reports the econometric results followed by robustness checks. Finally, section five contains the most important conclusions and policy implications from the study.

II. CONCEPTUAL FRAMEWORK: FDI AND LIBERALIZATION OF TRADE IN SERVICES

II.1. Literature review: Revising the determinants of FDI

The first generation of theories explaining international production – trade and FDI – is rooted in trade theory. This broad theoretical school, which has largely developed in the aftermath of World War II, was successful in explaining international trade, but has had lesser success in explaining the growing phenomenon of FDI (Hosseini 2005:231). FDI as mode of international trade is ruled out in comparative advantage theories. Both the Ricardian model and the Heckscher-Ohlin-Samuelson model assume perfectly immobile productive factors, therefore rejecting FDI as a form of international production or ignoring the possibility of international ownership of foreign production factors. Albeit relaxing several assumptions such as constant returns to scale, New Trade theories maintain that *'a firm is an independent organization that produces one good in one location'* (Markusen 1995:169). Although this theoretical school of thought, developed in the late 1970s and early 1980s, is incapable of explaining the existence of multinational enterprises and FDI, it nevertheless explain firms' ability to exploit economies of scale, as well as their product differentiation strategies under imperfect markets conditions (Markusen 1995:169).

Already in 1950s one could find models that, acknowledging the limitations of trade theories in explaining the existence and factors of FDI, attempted to shed some light to the underlying causes and attitudes surrounding international investment. Mundell's model (1957) is one of those. Based on the neoclassical trade theories of two countries, two factors of production and two goods, his paper aims at showing that trade and factor movements are substitutes and that an impediment of one of them stimulates the other. In order to prove that, he relaxes the neoclassical factor immobility assumption, letting capital flow freely between two countries. Despite being a more realistic model for international production, FDI remains absent from it, since capital movement to which the paper refers to are of the form of short term and portfolio types of investment. (Mundell

1957:321-22, Hosseini 2005:531). A variant of Mundell's model was developed later on by two members of the Japanese school – Kojima and Ozawa but they too failed to explain FDI, since they were based – as the rest of the mentioned models - on the Heckscher-Ohlin-Stolper-Samuelson model, which, as Casson highlights 'stands firmly in the neoclassical tradition' (Casson cited in Hosseini 2005:531) thus clearly failing to explain FDI.

In the 1960s, the neoclassical financial theory of portfolio investment was used to explain FDI. The theory argued that, in absence of risk, uncertainties or barriers to movement, capital would move from countries with low interest rates to countries with high interest rates (Dunning and Rugman 1985:228, Hosseini 2005:531). This theory was rooted on the neoclassical approach, which postulated that advanced economies had relative abundance of capital but scarcity of labour (Pitelis and Sugden 2000:13).

But while portfolio theory could adequately explain financial investments, it had less explanatory power in explaining the investor's switch between financial investments and real investments in different markets. In this sense, the portfolio flows' theory clashed with reality in many aspects. As Hymer (1960:16-17) and Hosseini (2005:531) pointed out, this theory was underpinned by unrealistic assumptions that, once removed, left the theory with no ability to predict the reality of FDI. In effect, capital was proven to flow not only from developed to developing countries, as the theory was predicting, but also from developing to developed countries, and, more importantly, since 1960s and 1970s, FDI direction changed rapidly and became mainly organized between industrialized economies (Pitelis and Sugden 2000:14). Dunning and Rugman (1985: 228) also criticized the theory by arguing that it wrongly assumed that capital flows were transacted between individuals, leaving no role for Multi National Enterprises (MNEs) on international investment. They highlighted that one could empirically see the existence of large MNEs when dealing with international production, and therefore, a theory that was meant to explain international production could not leave MNEs aside.

The failure of early trade theories to explain FDI and the growing scepticism about the portfolio theory brought Stephen Hymer to elaborate on a new theory that had an enormous impact on explaining the existence of FDI and MNEs likewise at a microeconomic level. His

doctoral thesis (1960) starts by stressing the shortcomings of the portfolio investment theory in explaining FDI. Aside from the limitations mentioned above, Hymer realized that there was a big difference between a portfolio investment and direct investment: the willingness of the investor to control the enterprise he lends to. As he stated it: 'If we wish to explain direct investment, we must explain control' (Hymer 1960:23).

Hymer finds two main motivations for a firm to seek control. The first one is the willingness to remove international competition among firms. One way to achieve that is by owning and controlling various enterprises. However, this will only be profitable if competition is imperfect or, in other words, if entering the market is difficult. If this is not the case, other firms will be able to enter the market and therefore, trying to control it will be pointless (Hymer 1960:42). The second motivation is to increase the returns on certain skills and abilities. That is, if a firm has a special ability to operate in a particular industry, it may find it profitable to enlarge its business to other countries. Although this firm can choose to rent or sell its ability, it will prefer to directly control the firm if the ability is very specific to its ownership (i.e. superior technology, trade names, patents, financial ability and so forth); in other words, if the market for this ability is imperfect (Hymer 1960:46-47). It is precisely this market imperfection, common in both motivations, that is crucial for the existence of MNEs and FDI. As Hosseini (2005) states in his article, for Hymer, 'the multinational enterprise, thus FDI, came to the existence because of market imperfections' (p.532).

Stephen Hymer died soon after his thesis was completed, but many other authors recognized the importance of his work and elaborated on it. In particular, the work of Buckley and Casson (1976) and Rugman (1981) among others contributed to the FDI literature with a new theory: the internalisation theory, based on Coase's transaction costs theory (1937) and dismissed in Hymer's work. These authors argue that Hymer had ignored transaction costs and had only looked at one type of market imperfection, the so-called structural-type, based on Bain (1956). The importance of transaction costs is emphasised by these authors, who argue that 'where the transaction costs of an administered exchange

are lower than those of a market exchange, then the market is internalised[4]' (Pitelis and Sugden 2000:17). This difference between types of market imperfection is crucial when assessing the efficiency of MNEs. While the structural-type of market imperfection implied that eventually the MNEs could harm efficiency of foreign plants by increasing the degree of monopoly power, the transaction-cost-type implied that MNEs were actually improving the efficiency of the market by internalising the transaction costs (Pitelis and Sugden 2000:15).

But Hymer and its successors' theories were not the only theories that arose during the 1960s and 1970s. Vernon and his work on the Product Life Cycle Model (PLCM) is one of the most prominent theories belonging to the mesoeconomic level. This theory suggests that the internationalization process of a firm depends on five stages in the life-cycle of a product: introduction of the product to local markets, growth of the product in the home country and everywhere else, which might imply moving production to lower cost locations, product maturity, which generally implies a concentration of the production in fewer hands, saturation of the sales and search for new substitutes and finally decline of the sales and the product in itself. In an article written in 1974 Vernon suggested a modified version of the PLCM which introduced oligopolistic considerations. This later version arose as a critique to the classical international trade theory, which assumed atomistic markets and factor immobility (among other assumptions) when explaining the existence of MNEs. In his article Vernon (1974) emphasised, as Hymer did in the 1960s, the importance of market imperfections for the existence of MNEs. As he states in his article included in John H. Dunning's book (1974), 'the multinational enterprise, of course, is the economic man of oligopoly theory, not the economic man of classical theory' (p. 112). His starting point was the empirical observation that MNEs are associated with a high level of innovation, which is the base for their oligopolistic strength (Vernon in Dunning 1974:91). He also suggested that as the product matures, the MNE's locational decisions will be influenced more by security reasons such as maintaining its oligopoly structure rather than profit-maximisation (Cantwell in Pitelis and Sugden 2000:24). This interest in locking up its power would lead

[4] That is, operations are performed within the company rather than throughout the market.

the MNE's to create economies of scale barriers and preserving the oligopolistic structure by price conventions, alliances and partnerships with other firms. All these practices, observed empirically, would imply a concentration of the investment in certain areas that will be higher than in a classically competitive market (Vernon in Dunning 1974:90-115).

Many other authors contributed to FDI literature by elaborating extensively on existing frameworks and theories and overlapping different approaches. The work of one author - J.H. Dunning (1973, 1977) - deserves special attention since, despite relying on existing FDI theories such as the one by Hymer (1960), Coase (1973), Buckley and Casson (1976) and Rugman (1981) it deviates from the common objective of explaining FDI on the basis of one single framework. Instead, he developed a global theoretical framework that embraced the main approaches of the moment, known as 'eclectic paradigm' or 'OLI paradigm'. As Cantwell describes it in his article in Pitelis and Sudgen book (2000), the eclectic paradigm 'is rather an overall organising paradigm for identifying the elements from each approach which are most relevant in explaining a wide range of various kinds of international production' (p.12).

The paradigm suggested that a foreign firm, in order to invest abroad, should have some advantages that the local firms do not have in order to offset the initial added costs of entering a new market (Markusen 1995:173). This idea is not new; Hymer already stated it throughout its thesis in 1960. On this basis, Dunning contends that a firm is likely to invest abroad if it possesses three types of advantages: ownership (O), location (L) and internalization (I).

The ownership advantages (O) occurs when the firm possesses an asset – tangible or intangible - that is particular to the firm and other firms do not have access to it. This asset can be a patent, a certain technology, the reputation of the firm, entrepreneurial skills and so forth. Notice that this kind of advantage is what Hymer referred to in his thesis as one type of market imperfection. The locational advantage (L) arises when producing in the foreign country is more profitable than exporting the good to the country. This may happen in case of tariff barriers, transport costs, cheap factor prices and so forth. Finally, the internalization (I) advantage, also mentioned later on by Buckley and Casson (1976) and

Rugman (1981) is related to the ownership one and it refers to situations where it is more profitable for the company to set up a subsidiary abroad rather than recurring to other alternatives – such as licensing or trading – to produce the product abroad. This situation arises, 'both from the greater ease with which an integrated firm is able to appropriate a full return on its ownership of distinctive assets (…) as well as directly from the coordination of the use of complementary assets' (Cantwell in Pitelis and Sudgen book, 2000:20).

The OLI paradigm also relates very well to two types of FDI mentioned by Markusen (1995) and Caves (2007) and which are widely used in empirical analyses: vertical and horizontal FDI. Most papers, when including variables at their econometric analysis to see whether FDI is vertical or horizontal, they do not relate them to any sort of theory. Therefore, one might end up viewing this classification of FDI as one that has barely anything to do with the FDI theories mentioned up to now. But the truth is that it keeps a very close relationship with the OLI paradigm and hence with many of the above-mentioned FDI theories.

Vertical FDI arises when a firm is willing to establish its production outside the country's border in order to be nearer the resources needed or because of cost-efficiency reasons. However, this cost-efficiency argument does not necessarily imply the need for a company to establish itself abroad. There are many ways by which a company may achieve cost-efficiency: it can outsource and trade part of the production, it can make a portfolio investment on a local firm in the host country, it can license the activity to a foreign firm located in the foreign country of interest, or finally, it can invest abroad via FDI. Therefore the relevant question is in *what* situation the firm will choose to establish itself abroad (FDI). And here is when the OLI paradigm might give us relevant insight: a firm may want to move part of its production processes to a host country with cheaper production costs whenever its ownership advantages such as reputation, patents, superior technology and so forth are relevant enough for the firm to be taken into account. This point is also made by Hymer (1960), who refers to it as market imperfection. Besides, the existence of transaction costs such as policing and enforcement costs, information costs or bargaining ones – also mentioned by Buckley and Casson (1976) and Rugman (1981) based on Coase

(1973) - may influence a firm's decision to engage into a FDI project to produce part of the final good instead of participating in an existing firms capital already settled down in the host country. Locational advantages do not apply here since vertical FDI needs tariff barriers to be low in order to export the part of the process to the source country again.

Horizontal FDI, instead, refers to the firm's decision to locate abroad in order to expand its market to foreign consumers and target them better with, say, product differentiation. As in the case of vertical FDI, one can argue that a firm seeking for new markets has no need to get involved into FDI; it can instead choose to create a different firm in the host country or to export there. Therefore, seeking new markets does not directly imply engaging in FDI projects. However, one firm will choose to engage in FDI projects if at least one of the following situations arises: in the presence of trade barriers, the firm will have locational advantages if it decides to engage in FDI projects instead of exporting. Also, if the product to be expanded or the firm in itself relies on certain abilities or skills that are imperfect to the market, the FDI option will be preferred to the exporting one (ownership advantages). Finally whenever trade barriers exist and transaction costs of relying in a local firm in the host country are high, internalising them via FDI will be worthy (internalisation advantages).

It is worth noting that in either case – horizontal or vertical FDI – FDI can enhance market efficiency if the underlying reason for it is to avoid transaction costs or trade barriers, or it can have no effect on market efficiency or even worsen it if it is a consequence of market imperfections such as the existence of certain skills or abilities.

The general nature of the eclectic paradigm and its inclusion of some of the most renowned FDI theories explains its success and acceptance among studious of FDI and MNEs. As Dunning argued in 1988, 'the theory of foreign owned production stands at the crossroads between a macroeconomic theory of international trade and a microeconomic theory of the firm' (Dunning 1988b:19 cited in Cantwell cited in Pitelis and Sugden 2000:23).

II.2. Literature review: What explains trade in services?

International trade in services takes place in four different and often-interrelated modes, depending on the geographical location of service suppliers and consumers. Cross-border trade (mode 1) occurs when the consumer and supplier of a given service are in different countries and only the service crosses the border as part of the service transaction (e.g. sale of insurance over the internet). In consumption abroad trade (mode 2) the consumer moves into the supplier's territory and consumes the service there (e.g. purchase of a tourism package abroad). In commercial presence trade (mode 3) the supplier provides the service in the territory of the consumer (e.g. local establishment of an international mobile telephony company). Finally, movement of natural persons[5] (mode 4) is the movement of workers – either employed or self-employed – into the territory of the consumer for the supply of services.

FDI is an important form of trading in services since it largely overlaps with trade in services through commercial presence. Commercial presence trade enables the supplier to supply its services in the territory of the consumer in a variety of methods. For example, very often the supplier will establish as a domestic legal entity, either local or foreign, which is equivalent to FDI. This mode of trade is also the most frequent and common way of trading in services and the lion's share of international trade in services takes place through commercial presence.

Since trade theory inform many FDI explanations, international trade in services and FDI theories are rooted in shared theoretical schools of thought of both inter and intra industry trade. Inter industry trade in services is explained by the theory of comparative advantage through relative differences in factor endowments and prices (McCulloch 1988; Sapir and Winter 1994; Hoekman 2006). Trade in services is often explained by human capital differences and investment as important elements explaining comparative advantage patterns (particularly investment in research and development activities). Human capital is

[5] Natural person is a General Agreement on Trade in Services (GATS) terminology that distinguishes between legal personality (e.g. a state) and real people.

considered critical in determining commercial presence trade and thus is very much linked to FDI (Sapir and Lutz 1981; Krugman 1983; Bhagwati 1984). The underlying assumption of factor immobility erodes some of the explanatory power of this theory concerning trade through the movement of natural persons, which often complements commercial presence trade.

New trade theory and intra-industry trade arguments recognise imperfect competition as an important motivation for international trade in services. Accordingly, a large number of service activities are conducted under imperfect competition conditions, such as oligopoly and economies of scale (Richardson 1987; Jones and Kierzkowski 1989; Sapir 1991; Sapir and Winter 1994; Van Welsum 2003; Hoekman 2006). Hence, as for FDI, certain service activities are explained by economies of scale effects, such as in the case of telecommunication services and financial services. Since trade theory is largely descriptive than prescriptive, oligopoly is theoretically considered to be the result of imperfect competition, rather than a strategy to prevent competitors as suggested by some FDI theories (Hymer, 1960: 42). The literature also argues that information and reputation problems can suppress international trade in services.

As mentioned above, services and FDI are closely related since commercial presence trade, the largest activity in services trade, is performed as FDI. One possibility is that trade in services will complement and encourage greater FDI. This result is most likely in those services that serve as a backbone to the provision of other goods and services, through both FDI and trade. Typical examples are financial services, transportation services, telecommunications and various professional services, such as legal services and accountancy and auditing services. Greater trade in these services through liberalization makes a wide range of economic activities more attractive for FDI, as they enhance efficiency and reduce the costs of doing business.

Complementarities between international trade in services and FDI are also pivotal for the growing processes of supply chain fragmentation across the global economy. In these

processes, trade in services can encourage FDI in several ways. As above noted, trade in services synergises with FDI since it creates a more efficient, favourable and attractive environment for doing business. Yet, greater trade openness also allows for exportation of services and goods produced through FDI. Thus, global supply chain fragmentation can benefit from increased production and outsourcing to low-cost countries, who can then export services and goods, either as final or intermediate products.[6] The trade in services and FDI nexus impact on supply chain fragmentation has also a considerable effect on employment and growth through job creation and greater domestic and international competition.

While trade in services and FDI can be positively related, some authors argue that there is a trade-off between cross-border trade and commercial presence. According to these arguments cross-border trade has a substitution effect on commercial presence trade, and hence firms' choose either to cross-border trade or to use FDI as mean of trade. At the heart of the matter is the question of whether geographical distance (and consequently government policies suppressing or enabling trade) plays a role in determining service providers' choice of export mode, or if technology has diminished the distance factor.

Empirical results are somewhat mixed with regard to whether cross-border trade and FDI complement or substitute each other. For example, Langhammer found a substitution effect in telecommunication services between cross-border trade and FDI (Langhammer 2004). Contrary to Langhammer's findings, and using similar methods, both Lennon and Fillat et al. find that FDI and cross-border trade complement each other.

The literature on trade in services and its relationship in the Mediterranean Region is rather limited. Nevertheless, evidence from both regional and country-specific studies suggests

[6] It should be noted that while supply chain fragmentation is driven by efficiency and costs considerations, it also depends on other factors such as human capital and cultural affinity.

that services are the key to regional and bilateral integration and are the area where most benefits are likely to take place. Benefits are considered to be particularly high in transport, energy, tourism, telecommunications and financial services. Numerous trade barriers for trade in services have been identified to affect trade and investment, including behind the border constraints, infrastructure shortage and absence, regulatory barriers, lack of market reforms and traditional political economy factors, such as the resistance of incumbents to the erosion of trade and investment advantages (World Bank 2003; Muller-Jentsch 2005; Herman 2006; Tovias, Kalaycioglu et al. 2007; Hoekman and Özden 2010).

II.3. Conceptual background: linking FDI and trade in services

The extensive proliferation of FDI that has taken place during the last decade provided evidence that the motivations of FDI can be manifold. Thus, any theory attempting to explain FDI focusing on a single motivation may have contributed to understanding FDI, but falls short to fully explain the underlying motivations of FDI. Although the OLI – or eclectic-paradigm cannot be considered a flawless theory, it addresses this concern by providing a general framework that gathers many of the existing FDI theories, and that is precisely why it is widely accepted among scholars when studying FDI.

As we have seen before, the eclectic paradigm differentiates between three types of advantages that a firm must have in order to decide to directly invest abroad: the ownership (O), the internalization (I) and the location (L) advantages, already explained above. This present paper focuses primarily on the locational advantages of the CEECs and MNMCs in attracting FDI.

Specifically, the paper focuses on one location variable – trade in services – and aims at assessing its role in boosting FDI in the MNMCs. As it has been pointed out in the literature review, the effects of services trade liberalisation on FDI are somewhat inconclusive, though there is growing evidence that complementarities exist between cross-border trade in services (as well as movement of natural persons) and FDI (Lennon 2008; Lennon 2009).

These findings are important since they highlight that trade in services barriers influence FDI even if those barriers are applied to other modes of trade. Thus, regulation and other trade-related policies can have considerable effects on firms' ability to trade and invest, since they affect market access as well as post and non-establishment performance.

The positive effects on FDI from greater liberalisation of trade in services, may not work both ways if FDI is used by firms as a mean to remove international competition, as suggested by Hymer (1960). Nevertheless, liberalisation of trade in services can minimise firms' monopolistic and oligopolistic tendencies, lock-in market competition for trade in services in modes complementary to FDI,[7] as well as eliminate some of the initial conditions that lead to imperfect competition in the form of diminishing transaction costs and expansion of market scale (Coase (1973), Buckley and Casson (1976) and Rugman (1981)).

Furthermore, liberalisation of trade in services can have significant positive effects on FDI and trade in the non-service economy. Backbone or infrastructure services, such as transportation and financial services enable the tradability of goods and facilitate FDI. International production also makes substantial use of intermediate services, and the production of almost any good consists of several service stages. The rise of the service economy is largely attributed to the outsourcing of many of these intermediate services that had once been performed in-house (Bhagwati 1984; Porter 1998).

Our analysis will rely on the gravity model specification, which will allow us to test the conceptual framework highlighted here and therefore, to prove our initial hypothesis. The specification of the gravity model will be done in the empirical strategy section, and the determinants chosen will be fully explained in the same section. These determinants will all of them have a base in the locational advantages mentioned above, and our aim is to carry on different econometric analysis to distinguish the role of the different variables and more importantly, to test the importance of liberalization of trade in services.

[7] Particularly if liberalisation of trade in services is bounded by a country as an international legal binding within multilateral and regional trade agreements.

II.4. The cases of Egypt and Jordan: some casual evidence

Before proceeding with the econometric modelling and analysis it might be useful, if not decisive , to look for some casual , if not causal correlation, between trade in services and FDI in two of the MNMCs under focus in this report, namely Egypt (for which there are enough data to proceed with the econometrics later on; see later) and Jordan, another relevant case because of the importance of trade in services for a country, with access to the Red Sea and therefore with a prominent role in intermodal transport of merchandise through its port of Akaba. This besides the importance of the tourist sector and migrant remittances of expatriate workers mainly in Gulf countries.

First, the case of Egypt is interesting because on the one hand it has signed an enormous array of trade agreements dealing with merchandise but not with services. On the other hand it is an economy very much dependent on trade in services through at least three channels: tourism (Mode 2), Suez Canal-related income (Mode 2) and a substantial share of migrant remittances (those related to Mode-4 via temporary movement). Egypt is a signatory of the Common Market for Eastern and Southern Africa and a founding member of the Pan Arab Free Trade Area. It was a trade partner of the European Union (EU) even before the Egypt- EU Partnership Agreement entered into force in June 2004. It should be reminded here that Egypt and the EU had signed a cooperation agreement already in 1976 under the EC's Global Mediterranean Policy launched in 1972. Egypt also signed an Action Plan in the framework of the European Neighbourhood Policy. In addition, the country has recently signed bilateral trade agreements with Turkey and Russia, strengthened bilateral cooperation with China and established a number of Qualified Industrial Zones (QIZ) with Israel to ensure better access to the US market. In recent times, the terms of the QIZ agreement have been changed to reduce the share of Israeli components from 11.7 per cent to 10.5 percent, and the agreement has been expanded to include eight regions in Upper Egypt. Since the onset of the world economic crisis, Egypt has been protected from financial shocks but exposed to real shocks in the economy. Egypt's financial system is less integrated into the world's financial system than many other countries. Capital flows while increasing, have been relatively limited. The amount of portfolio investments has also been

fairly small, and the Egyptian banks are not very strongly integrated into the international system. Egypt, in that sense, has been fairly protected from shocks. However, Egypt has not been protected from the impact on the real economy of external shocks that come from a drop in tourism revenues, volatility in oil and gas prices (which in turn affects the volume of traffic in the Suez Canal), and volatility in the supply of gas to Israel by pipeline, and thus influence on gas- and oil-related FDI. Thus although the financial sector side of Egypt is not highly exposed, its real economy is likely to be vulnerable through the external sector channel and mainly through the two channels investigated in this report ,namely trade in services (transport and tourism) and FDI.

To illustrate the point made, consider that the real GDP growth rate continued the upward seven-year trend that began in 2004 until early 2011 with the onset of the Arab Spring. The main economic sectors contributing to this growth, e.g. in 2006/07 were industry, construction, real estate and tourism[8]. The continued growth gained during the period had its positive effect on growth and employment. A growth rate of 4.7 percent is enough to absorb the growth in the labor force. The strength of the domestic economy of the past years gave the Egyptian economy the resilience it needed to weather the consequences of the financial crisis (starting in 2007 and still going on at present) on the real economy. Strongly contrasting with the preceding, is the dismal reduction in the growth rate since early 2011 because of the total paralysis of the tourism sector and important disruption in the energy supply by pipeline from Egypt to Israel.

In the case of Jordan judged by the latest Trade (MFN) Tariff Restrictiveness Index (TTRI), on which it is ranked 87th out of 125 countries, Jordan's trade regime is slightly more liberal than an average middle-income or Middle East and North Africa (MENA) country, and yet less so than an average lower middle-income country. Its 2007 MFN applied simple average tariff (11.2 percent) on imports of merchandise is lower than the regional mean, and its import-weighted tariff average (9.5 percent) is lower than both the regional and income group means, as is the maximum tariff rate of 180 percent (applicable on some

[8] http://www.oecd.org/

wines, spirits and liquor). At 51 percent (2001), however, its nontariff measures frequency ratio was almost twice its comparators'. MFN duty free imports accounted for 40.7 percent of the country's imports in 2006, up from 17.3 percent in the early 2000s. What is more important for this report, with respect to services, the government has made considerable progress with its privatization program since the mid-1990s and its strategic plan envisions full liberalization of telecommunications. Its trade regime for services, as reflected in its high overall GATS commitment index, is one of the most liberal in the world, according to the World Bank[9]. What is notable for this report is that Jordan's real growth in trade was for instance 10.7 percent in 2007, primarily driven by one of the world's highest export growth rates of 13.3 percent. Following a period of low growth in the late 1990s (0.7 percent), its real trade growth accelerated to 8.3 percent in the early 2000s, followed by a slower period of growth in 2005–06 (6.8 percent). Its trade share in GDP increased from 117.0 percent in the early 2000s to 149.4 percent in 2007, an integration ratio considerably above that of an average MENA or lower-middle-income country. (ibid). It is worthwhile noting here that some trade in goods and services are the outcome of important foreign assistance programmes (in the form of tied aid), mainly originating in the United States and the European Union which are the two largest donors. Aid accounts for 4% of gross national income (GNI)[10].

As in the case of Egypt (see above), Jordan's limited integration with global financial markets has buffered it from the World's financial crisis since 2008. At the same time, strong trade links with the region and rest of the world, which have underpinned robust economic growth in recent years, imply that the global economic downturn (and the Arab Spring) are and will affect the domestic economy. Managing the slowdown is the key near-term challenge[11].

[9] http://www.worldbank.org/wti2008

[10] http://www.oecd.org/

[11] http://www.imf.org/external/np/ms/2009/030809.htm

In sum, if one goes by recent casual empirical evidence it appears that Egypt and Jordan are two MENA countries where the business cycle is largely driven by changes in the balance of trade in services (and not so much by the balance in trade in goods, excluding the special case of energy products)[12]. Whether this in itself leads to changes in inward FDI is to be proven in what follows by the econometric analysis below.

[12] This has been so for the last three decades. See early evidence in Tovias (1994).

III. STYLIZED FACTS

In this section we will describe FDI and trade in services patterns between the MNMCs and the EU. In order to do so we will start by analysing the global patterns and will gradually narrow down our analysis to the region of interest. CEECs patterns will also be identified and used as a benchmark.

III.1. FDI stylized facts

a. FDI global comparative analysis

FDI evolution in a certain region may be influenced by global and/or regional shocks. Regional shocks may arise from a change in the *status quo* of the region studied, and they may be of different nature: institutional, political or economic. We are interested in assessing the impact of a specific institutional shock, namely, the impact of liberalization of trade in services by agreement between two partners on FDI levels. Therefore, a general overview and comparison of global and regional FDI trends is necessary to assess the current and past FDI situation in the MNMCs. In the first part of the project research is limited to the identification of regional shocks, without entering into the nature of the shock (i.e. whether it is because of the trade liberalization of services or not). The latter will be examined later on in the second part of the project, i.e the econometric analysis.

An FDI global comparative analysis is carried out in three parts. Firstly, we have looked into the evolution of FDI percentage annual growth levels between the world and different regions and amongst regions themselves. This set of comparisons includes:

a) Comparison between World FDI stocks and outward FDI stocks from the EU15 to the World, with the aim of setting a benchmark in the evolution of FDI stocks.

b) Comparison between outward EU15 FDI stocks to the World and outward EU15 FDI stocks to the CEECs and the MNMCs.

c) Comparison between outward EU15 FDI stocks to CEECs and MNMCs and other emerging economies, namely Far East Asia and Latin America.

Secondly, we have examined the share of outward EU15 FDI stocks received by different regions. We trace and analyse:

a) The evolution of the share of outward EU15 FDI received by different countries, covering almost 90% of total outward EU15 FDI stocks.

b) The evolution of the share of outward EU15 FDI received by all emerging economies taken together, i.e. Eastern Asia, Latin America, CEECs and MNMCs.

c) The Evolution of the share of outward EU15 FDI received by each of the emerging economies mentioned above.

And thirdly, we have calculated the ratio of EU15 FDI/GDP for the CEECs and the MNMCs. Since the two regions are not comparable in terms of population, GDP and size, a comparison of the absolute values of FDI would not be accurate. Instead, we opt to take into account GDP levels and use FDI/GDP ratios when comparing FDI levels, allowing us to compare FDI performance in both regions.

Data description

The data used for FDI global comparative evolution is FDI stocks, leaving FDI flows aside. The reason for that is that flows are usually very volatile and therefore they are not very helpful to explain the trends.

EU15 – and not EU27 - is the chosen EU area. The main reason is the significant lack of data for most of the bilateral CEECs' outward FDI in early years. In order to see whether the omission of the 12 countries entering the EU in 2004 and 2007 could eventually affect the objective of the task – i.e. to see the evolution of FDI global data – we have measured the relevance of aggregated CEECs' outward FDI with respect to EU27 to the rest of the world. The results show that the percentage of outward EU27's FDI to the world coming from the CEECs is close to 0% until 2004 and that from 2005 to 2009, the percentage is less than 3%.

Therefore, and taking into account that the goal is to see the evolution of data, we consider that taking out CEECs from our analysis does not affect the accurateness of the objective.

FDI stocks data for the World has been taken from the UN Database (UNCTADstat). Data is available from 1980 to 2009. The currency is millions of USD and has been converted to ECU/EUR using the historical exchange rate website Oanda. FDI stocks data for the rest of the regions (EU15 to world and EU15 to the remaining regions) has been taken from Eurostat 2010, where data is available from 1994 in ECU/EUR. The choice of relevant economic zones and the countries forming the economic zones has been made according to Eurostat BoP *Vademecum*. The economic zones named as emerging economies have been taken from Eurostat FDI Yearbooks.

GDP figures for the CEECs have been taken from Eurostat, available since 1995. GDP figures for the MNMCs were not available in Eurostat for the whole period 1995-2009. Therefore, we have taken them from the World Bank Development Report (in US dollars) and have used Oanda to convert the data to ECU/EUR.

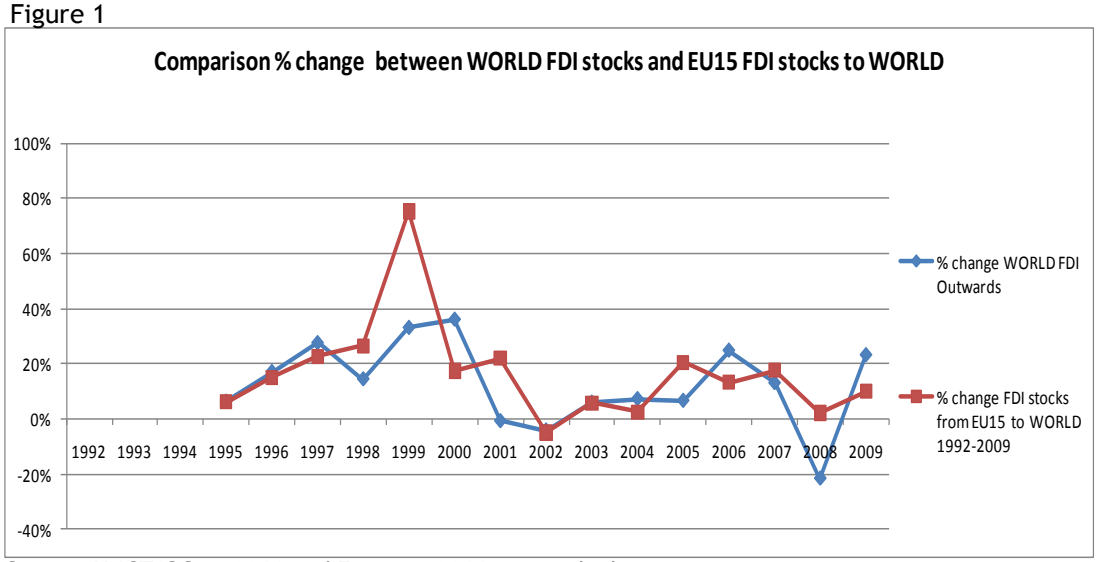
Results

Evolution of FDI percentage annual growth

Comparison EU15-World

The evolution of EU's outward FDI stocks to the World follows basically the same pattern as the one of World FDI stocks, except for 1999, where EU15 outward FDI stocks increase at a higher pace with respect to world FDI stocks' growth (75% versus 33% growth). The average growth of FDI stocks from 1995 to 2009 is slightly higher for EU15 than for the World (17% versus 13%).

Figure 1

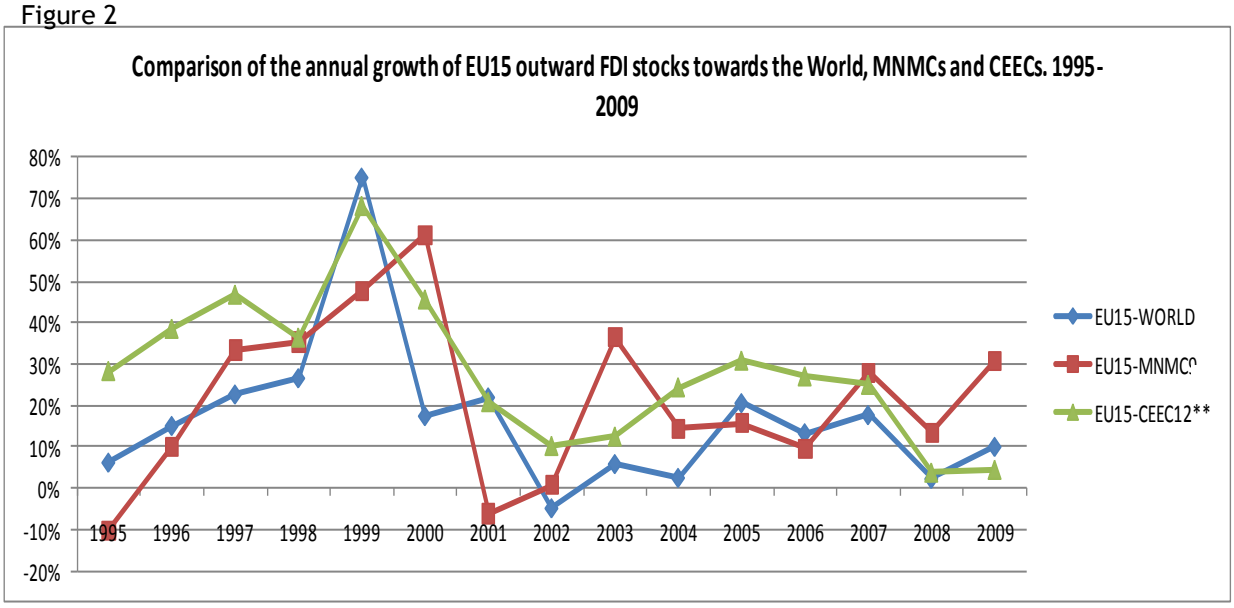


Source: UNCTADStat 2011 and Eurostat 2011, own calculations

Comparison EU15 to CEECs and MNMCs

The trend of FDI stocks from EU15 to CEECs and MNMCs is similar in all the period to that of

Figure 2



Source: Eurostat 2011, own calculations

EU15 to the world. However, in both cases (CEEC and MNMC) the growth rate is usually higher than the growth rate of FDI EU-15 stocks in the world; except for when there is a

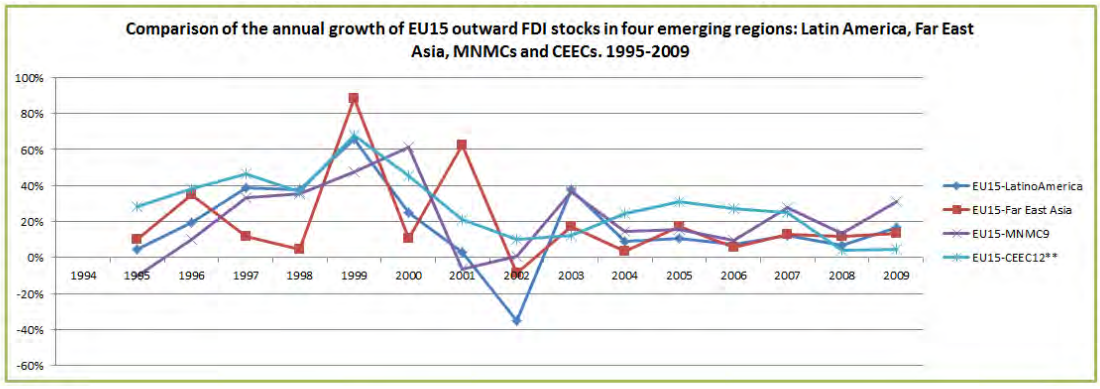
growth peak, in which case EU15 outward FDI stocks growth is always higher. The average growth rate of outward EU15 FDI stocks is higher in the CEECs (28%) than in the MNMCs (21%) and the world (17%). Notice that the growth peak in 1999-2000, which was not a global shock, but something particular of EU FDI stocks, is present in these two regions as well.

Comparison amongst emerging economies

CEECs are the emerging group of economies that have experienced the highest growth in inward FDI coming from EU15 compared to the other emerging economies (28% for the whole 1995-2009 period, against 21% for MNMCs, 20% for Far East Asia, 17% for Latin America, 17% for World and 13% in the World).

The four emerging regions have seen their inward FDI from EU15 grow faster from 1995 to 1999 than any other period. The CEECs have been the ones with higher growth (44%) followed by the other emerging economies, which present an average growth similar to the one from EU15 to world and World. (30% for EU15-MNMC, 32% for EU15-Latin America, 27% for EU15-Far East Asia and EU15-World and 22% for World).

Figure 3



Source: Eurostat 2011, own calculations

During the period 2001-2003 the four emerging regions had a slower growth ratein FDI stocks than the previous period, especially Latin America (2%). The EU15 outward FDI growth to CEECs (15%), MNMCs (10%) and Far East Asia (24%) was still higher than the EU15 to World's (8%) and the World's (0%).

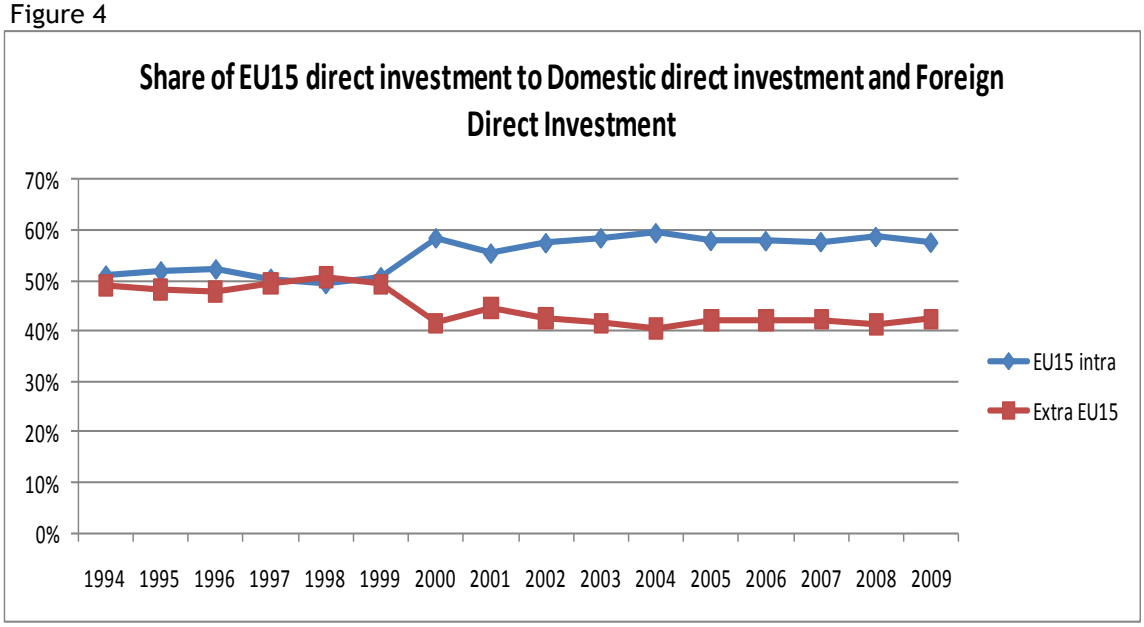
From 2002 on, the average growth of the four regions was re-established but not up to the previous 2000 levels.

We have to bear in mind Latin America's biggest recession in 1998 that would last until 2002, pushed by the Asian crisis and Brazil's crisis which diverted FDI out of the region. More or less at the same time, from 1996 to 1998, Far East Asia experienced a downward growth of inward FDI, probably due to the Asian crisis in 1997. As for MNMCs the 2001 decrease in the stock by 6% might possibly be an indirect result of the war in Afghanistan ..

Share of outward EU15 FDI received by different regions

Comparing the percentage of direct investment that stays within the EU15 (domestic) to the one that goes out (FDI), we see that from 1994 until 1999 the percentage was 50%-50%. From 2000 on, EU15 domestic direct investment exceeds EU15 FDI, although remaining at

Figure 4



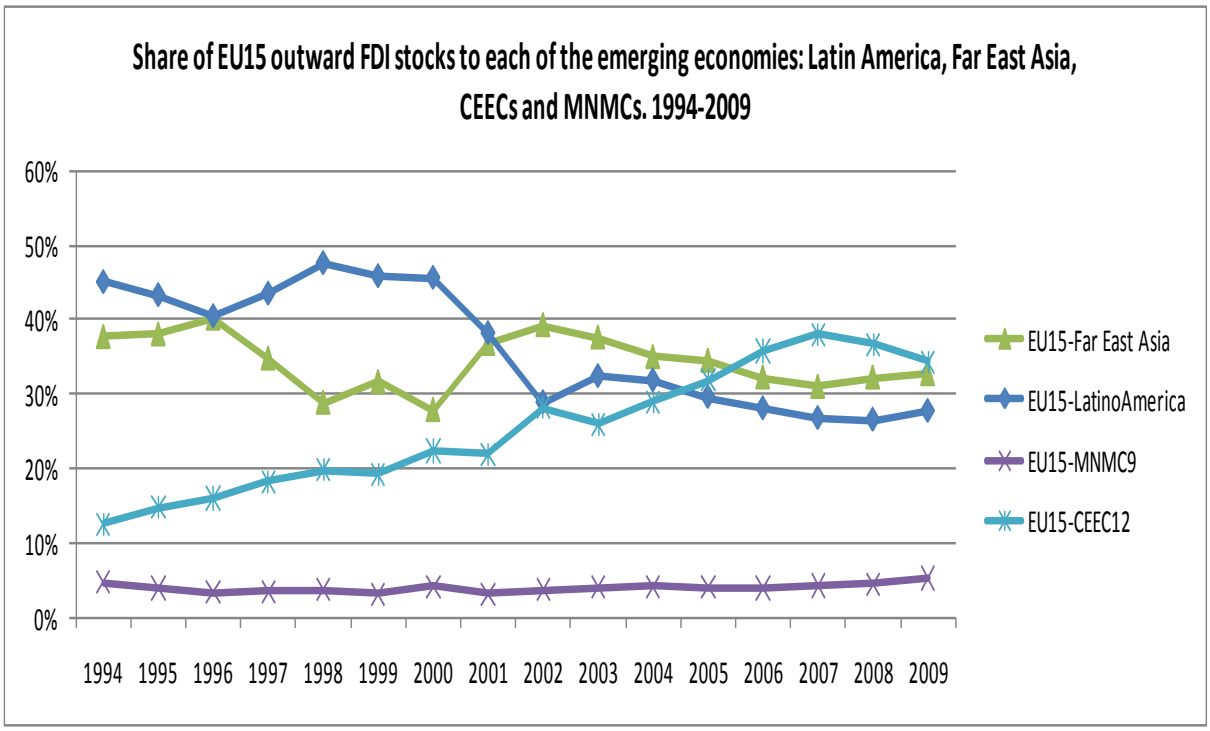
Source: Eurostat 2011, own calculations

60% until 2009.

Leaving domestic direct investment within EU15 aside and focusing on FDI, (40%), 30% of it went to the US in 2009 – compared to 44% in 1995 - and 29% goes to the emerging economies in 2009 – compared to 19% in 1995. Therefore, we have seen that the US as a recipient of EU15 FDI has lost positions which have been partly taken by the emerging economies, mainly the CEECs. The latter represents 7% of this 10% increase of the emerging economies from 1994 to 2009.

If we compare the share of outward EU15 FDI amongst emerging economies – that is, taking EU15 FDI to emerging economies as 100% - we see that the CEECs have experienced an increase in its share of 22% in detriment to Latin America and Far East Asia, which have experienced a decrease in 17% and 5% respectively. FDI in the MNMCs has remained stagnant.

Figure 5

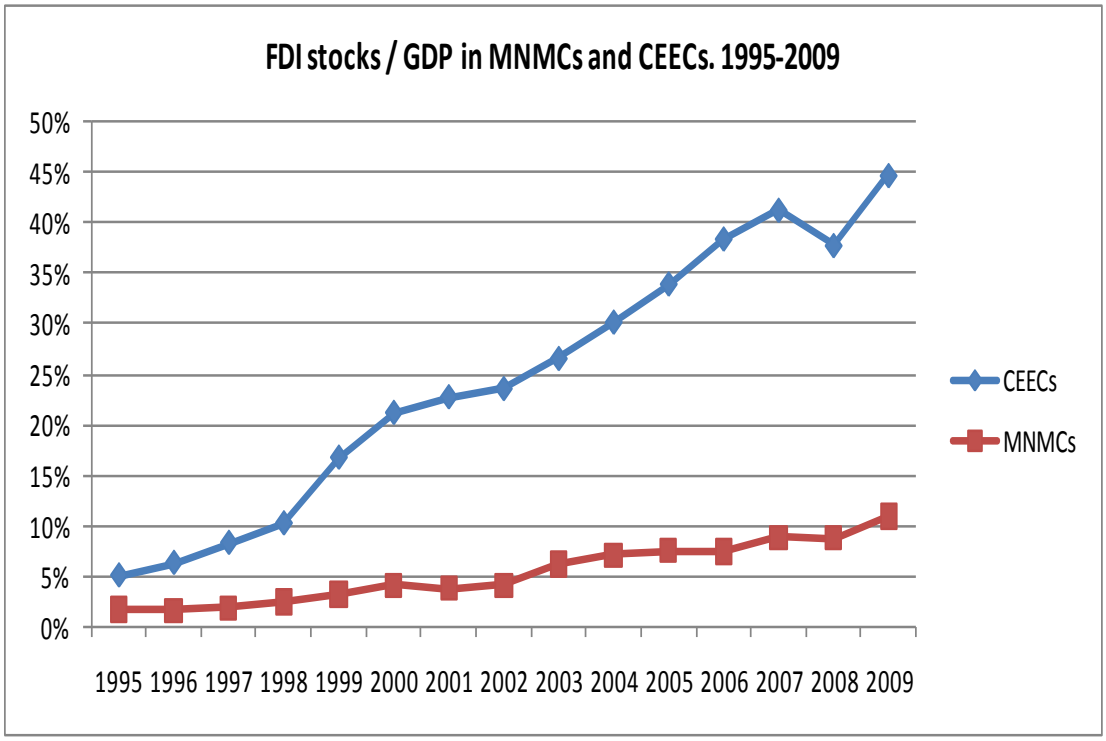


Source: Eurostat 2011, own calculations

FDI/GDP ratio: assessing FDI levels

Taking into consideration the ratio of EU15 FDI with respect to the GDP of both CEECs and MNMCs, we can observe that EU15 FDI levels have barely increased in the MNMCs. The FDI/GDP ratio in the MNMCs was of 2% in 1995, and increased up to 11% in 2009. Instead, for the CEECs, the increase of the levels of FDI with respect to GDP has been much higher, starting with a 5% in 1995 and reaching 45% in 2009. It is highly plausible that most FDI flows from the EU15 to MNMCs predate the period in which this report focuses, something that would concur with the notion that these were investments made by European firms in the energy sector (e.g. in Egypt or Algeria). Thus the stock of FDI from the EU15 in 1995 was high and any increase in net investment thereafter must be related to this high initial base. On the other hand it is not surprising that investment has been flowing from Western Europe to eastern Europe only after the fall of the Berlin Wall and the demise of the Soviet Union, as previously it was almost non existent.

Figure 6



Source: Eurostat 2011 and WB Development Indicators 2011, own calculations

Interpreting the results for MNMCs

The evolution of FDI annual percentage growth indicates that the average growth rate of outward EU15 FDI stocks in the MNMCs resembles the average growth rate of outward EU15 FDI stocks in the CEECs and in the world.

Taking into consideration the emerging economies as a benchmark, MNMCs experiences for the whole 1995-2009 period a rather high growth of inward EU15 FDI stocks of 21%, only behind the CEECs (28%). The rest of the emerging economies' experienced a lower growth of inward EU15 FDI stocks.

This data does not prove the existence of any disadvantage of MNMCs in terms of FDI with respect to the rest of the world and the other emerging economies.

On the contrary, if we compare the share of inward EU15 FDI amongst emerging economies, one can clearly see that the record of MNMCs as FDI recipient countries is far from being optimal. From all the emerging economies MNMCs are by far the least important recipient, with a constant share of 4-5%. While the CEECs have experienced an increase in their share of 22% - increasing from 13% in 1995 to 34% in 2009 – and positioning themselves as the emerging economies with the highest share of EU15 FDI, the MNMCs share of EU15 FDI has remained stagnant during the whole 1995-2009 period.

The FDI/GDP ratio gauged for the MNMCs and the CEECs during the 1995-2009 periods confirms the above statement about the unattractiveness of MNMCs – compared to CEECs - as recipients of FDI.

b. Regional analysis

The above analysis has provided us with suggestive trends about the FDI performance of the Mediterranean Region as well as the Central and Eastern Europe Region. The regional analysis will instead provide us with deeper insights of each of the regions in terms of FDI. This analysis recognises that a certain level of heterogeneity among countries within the same region may exist, be it in economic, institutional, political, social or geographical grounds. Different country characteristics exert an influence on the level of economic development and therefore on the level of FDI as well. Knowing which countries perform best at investing or receiving investment may provide us with relevant information about which of these country characteristics should be taken into account when performing the econometric analysis.

This analysis will therefore focus on studying, on the one hand, which EU15 countries stand out as investors in the CEECs and the MNMCs and on the other hand, which MNMCs and CEECs are the main receivers of EU15 FDI. In order to do so, the analysis will be carried in the following way:

a) We will first examine the role of each of the countries of the European Union in FDI. For that purpose, we will analyse first the propensity of each EU15 to invest

abroad by setting the ratio *outward FDI stocks/GDP*. This ratio will allow us to compare different countries FDI behaviour regardless of their economic size. Secondly, we will draw the evolution of investment (in flows) of each EU15 country in the CEECs and MNMCs (as a region and separately) in absolute values. And thirdly we will compare the investment that each EU15 country does to the CEECs and MNMCs (as a region and separately) to the investment done by the EU15 all over the world.

b) We will carry out an examination of FDI for each of the countries of Central and Eastern European region and the Mediterranean Region. For each region we will first calculate the openness of the different countries by setting the ratio *inward FDI stocks/GDP*. Secondly, we will draw the evolution of investment from aggregate EU15 countries to each CEEC and MNMC in absolute values, to see the main receivers in absolute values. Finally we will compare the investment received by the EU15 countries to the investment received from all over the world for each MNMC and CEEC, to see if the EU15 has an important role on each of the countries inward FDI.

c) Finally, we will interpret the results for the MNMCs, comparing it with the CEECs, in order to see whether their respective regions are similar in terms of FDI patterns (e.g. whether FDI relative to GDP is focused on small countries, whether there are leader countries that concentrated all the FDI at the beginning, whether diversification of host countries have occurred and so forth).

Data description

The data used for the regional analysis is FDI depends very much ofn availability for the countries studied and refers mainly to stocks when descriptive data is reported and flow

when econometric analysis is performed. We have used flows for the evolution of FDI in absolute values, as this data will be used for the econometric analysis For the rest of analysis, since ratios were in place, we have used stocks. Using stocks allows us to have less volatile data and therefore it is better for a comparative analysis.

EU15 – and not EU27 - is the chosen EU area and the main reason is the same as the one stated in part *a) Comparative global evolution*. As for bilateral data for the MNMCs, we have compiled data from Eurostat according to the areas named Maghreb, Mashrek and Israel. The reason for such decision is the scarce availability of data for each individual country in all databases. Eurostat states that the Maghreb region is formed by Morocco, Algeria and Tunisia and the Mashrek region by Egypt, Jordan, Syria, Lebanon and the Occupied Palestinian Territories (BoP *Vademecum* Eurostat 2008:180).

FDI data from each EU15 country to the World has been taken from Eurostat. Data is in euros and available from 1992 to 2009. Bilateral data from each EU15 to each CEEC and each MNMC has been taken from Eurostat and complemented with the OECD database. Eurostat had all data in euros and available from 1992 to 2009. As for OECD statistics, we have always searched data considering EU countries as the reporting economy, and therefore all data are in euros except for the UK, Denmark and Sweden, whose data has been converted from their currency to euros using Oanda. OECD data availability is from 1985 to 2009. We have then grouped data according to the needs of the analysis by adding up the different countries. FDI data from the World to each MNMC and to each CEEC has been taken from UNCTADStat database, whose data is available in USD at current prices and current exchange rates from 1980 to 2009. We have then converted this data to euros using the website Oanda. As for GDP data, GDP of each EU15 country and each CEEC has been taken from Eurostat, available in euros and from 1992 to 2009. GDP of each MNMC has been taken from the World Bank Development Indicator (Worldbank database), where data is available from 1960 to 2010 and is reported in current *millions* USD, converted afterwards to euros using Oanda exchange rate.

Results

European Union regional analysis

The ratio *outward FDI stocks/GDP* carried out for each EU15 country confirms that small-sized EU countries are the ones that invest most abroad in relative terms. Taking the average investment over GDP of the last five years (2005-2009), Luxemburg, Ireland, the Netherlands, Sweden and Belgium $A = \pi r^2 A = \pi r^2$ the five top investors, the first three with ratios that overpass 100%.

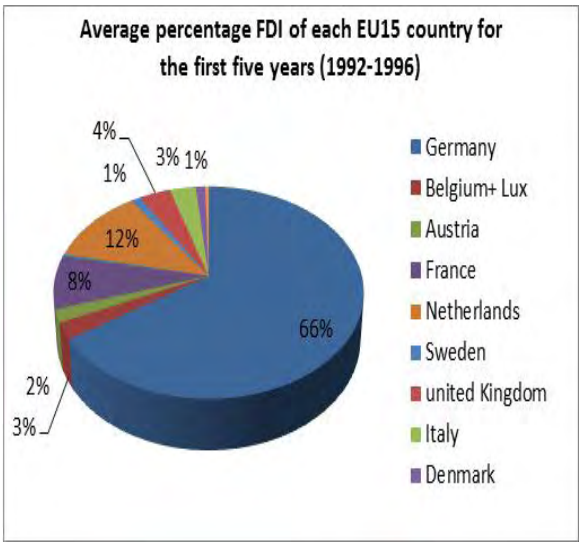
Table 1

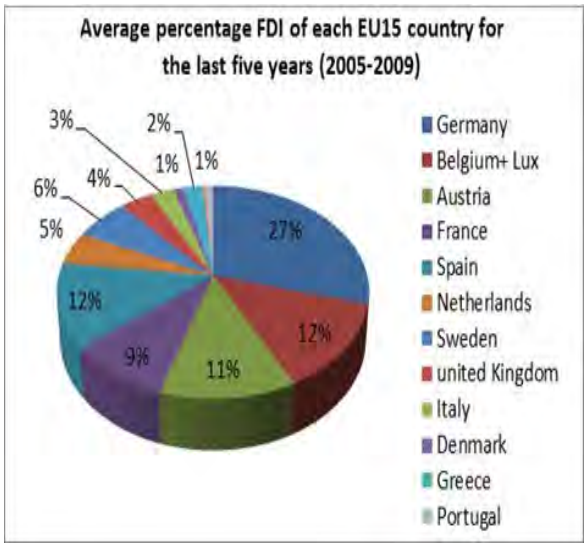
Average FDI stocks relative to GDP (2005-2009)								
	Luxemburg	**Belgium**	**The Netherlands**	**Ireland**	**Sweden**	**UK**	**Denmark**	**France**
FDI/GDP	156%	115%	109%	69%	68%	62%	56%	51%
Source: Eurostat, own calculations								

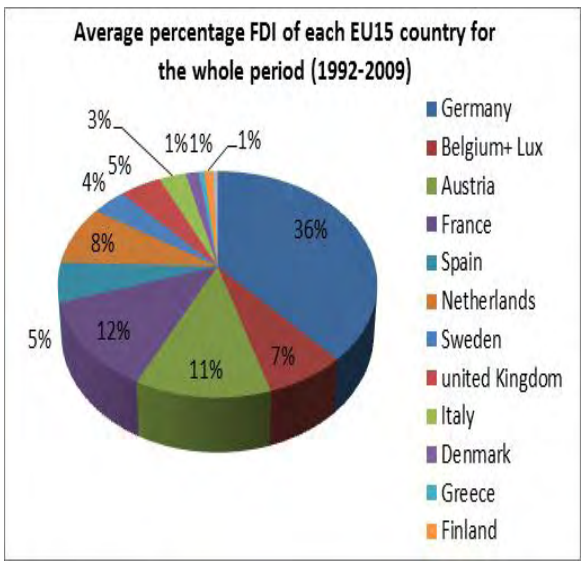
EU15-CEECs

Regarding the investment in the CEECs, a diversification of the home countries investing in the CEECs has occurred throughout time, although we cannot conclude about how much of this diversification is due to missing data during the early nineties and how much is due to a real diversification. Whereas in absolute values Germany is the country that has invested and still invests most in the CEECs, other small size countries have also acquired, throughout time, a major role in the CEECs. Taking into account the share of FDI (flows in absolute values) that each country represents in the aggregate figure and calculating the average for the first halve of the nineties, Germany and the Netherlands' relevance in FDI in the CEECs clearly stands out, representing altogether 77% of the FDI in the CEECs. The former has managed to keep the leadership of FDI in CEECs all over the period studied, although its relevance has decreased with time. Computing the average for the last five years, it is remarkable that other small countries such as Belgium-Luxemburg and Austria

Figure 7







Source: Eurostat 2011 and OECD 2011, own calculations

have increased their prominence. Taking the average for the whole period studied, Germany, Austria, France and Belgium-Luxemburg together represent 66% of FDI in the CEECs.

The last ratio – FDI stocks to the CEECs as a percentage of total FDI stocks to the World – shows that two countries in the EU15, i.e. Greece (with 41%) and Austria (with 31%) direct a large part of their investments abroad to the CEECs , followed only far behind in this respect by Germany (5%) Belgium and Denmark (4%).

Table 2

Average ratio outward *FDI stocks to CEECs/FDI stocks to World*					
	Greece	**Austria**	**Germany**	**Belgium**	**Denmark**
ratio	41%	31%	5%	4%	4%
Source: Eurostat, own calculations					

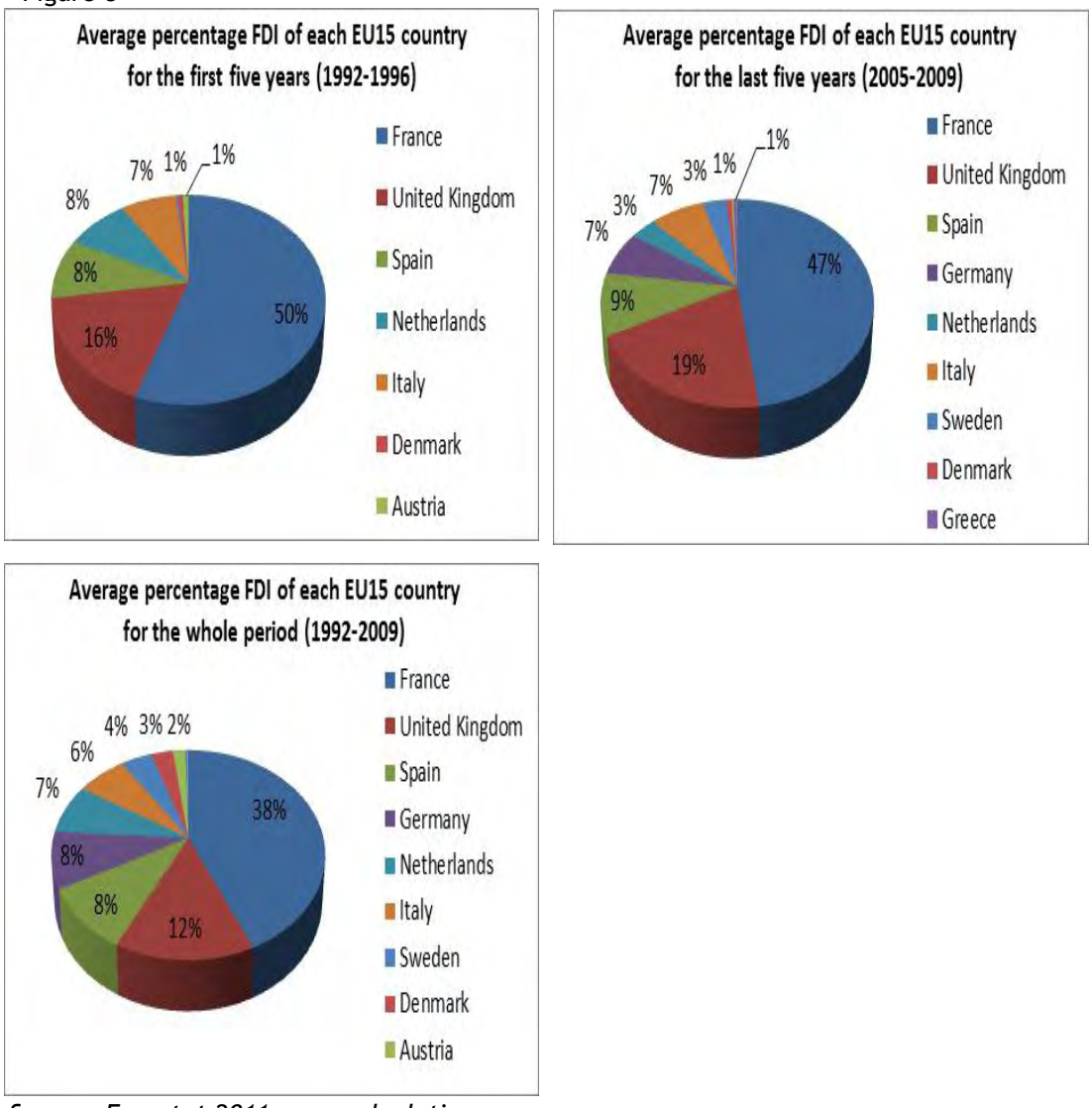
The whole picture, therefore, gives us a hint about two main characteristics of the EU countries that invest in the CEECs. One of them is the importance of distance when it comes to FDI: Austria and Germany are important players when gauging the FDI in absolute values. Those two actors appear once again as relevant when FDI to CEECs is measured as a percentage of total FDI to the World done by each EU15 country. Greece also stands out as a main actor in the latter ratio. **The second characteristic is that small countries seem to be very keen on investing abroad.** This feature has been shown when calculating the FDI/GDP ratio, where small countries such as Luxemburg, Belgium, the Netherlands and Ireland have stand out as major actors.

EU15-MNMCs

Having a look at the flows in absolute values from each EU15 to the MNMCs, one observes that, despite the flows' volatility, there is an increasing trend of EU15 FDI to MNMCs. The UK and France are by far the countries that invest more in absolute values in the MNMCs. Their prominence is confirmed by the share of FDI that the two countries represent in total EU15 FDI to the Mediterranean area throughout the period examined, amounting to 50%. Calculating the average for the first five years (1992-1996) and for the last five years

studied (2005-2009)France and UK have a share of approximately 65% of the EU15 FDI in MNMCs. Spain, Germany, the Netherlands and Italy add up to approximately 25% of EU15 during the whole period studied as well as during the first and last five years. We can thus say that as far as the MNMCs are concerned, France and the UK followed by Spain, Germany, the Netherlands and Italy are the countries that do almost all the investment of the EU15 in the MNMCs.

Figure 8



Source: Eurostat 2011, own calculations

With regards to EU15 FDI stocks in the MNMCs as a percentage of total EU15 FDI stocks abroad, the data shows that no EU15 country has in relative terms much investment in the MNMCs. The share for each country in the EU15 varies between 0% and 1%.

Therefore, we can conclude that **only a few EU15 countries - France and thr UK followed by Spain, Germany, the Netherlands and Italy - invested relatively speaking heavily in the MNMCs during the period 1992-2009**. FDI does not seem to be influenced by the relative size of the country. Instead, **what four (France, UK, Spain and Italy) of the six investors share among them is their colonial past in the Mediterranean**. And of these four, France and UK post-colonial ties were the most extended ones.

Finally, it is worth mentioning that despite the increasing trend in absolute values of EU15 FDI to the MNMCs, the ratio of FDI to MNMCs over FDI to World confirms that the **MNMCs are not an attractive area to FDI for any of the EU15 countries.**

CEECs regional analysis

We have used the ratio *inward FDI/GDP* to assess the openness of each Central and Eastern Europe country. Once again, the ratio confirms small countries as the most open ones. Hungary and Malta have an average openness ratio for the period 2005-2009 of more than 100%. These two countries are followed by Cyprus, Bulgaria, Estonia, whose openness percentage stays around 80% and the Czech Republic and Slovakia, with an openness ratio slightly over 50%. However, not all small countries are open countries when it comes to FDI: Slovenia, Lithuania and Latvia have the lowest rates of openness, sharing positions with Romania and Poland, the two biggest countries.

Table 3

Average FDI stocks relative to GDP (2005-2009)				
Top five countries				
Hungary	Malta	Cyprus	Bulgaria	Estonia
132%	100%	81%	80%	78%
Bottom five countries				
Slovenia	Lithuania	Poland	Romania	Latvia
27%	24%	36%	36%	37%

Source: Unctad for FDI stocks and Eurostat for GDP, own calculations

Comparing the average openness ratio of the last five years (2005-2009) with the average openness ratio for the whole period (1992-2009) one can observe that CEECs have also increased their openness throughout time. This can be seen in table 4, where the average openness ratio for the whole period and for the top five countries mentioned above is shown:

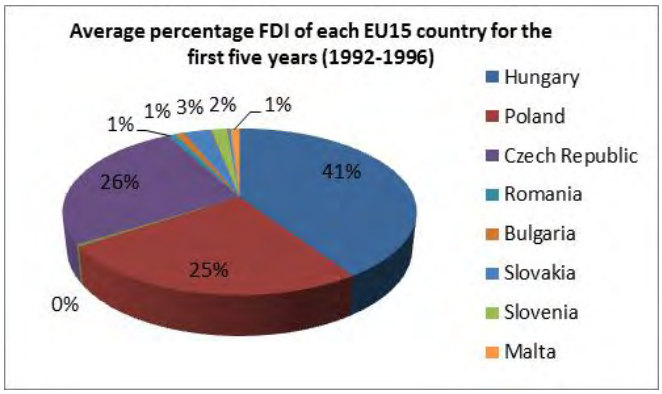
Table 4

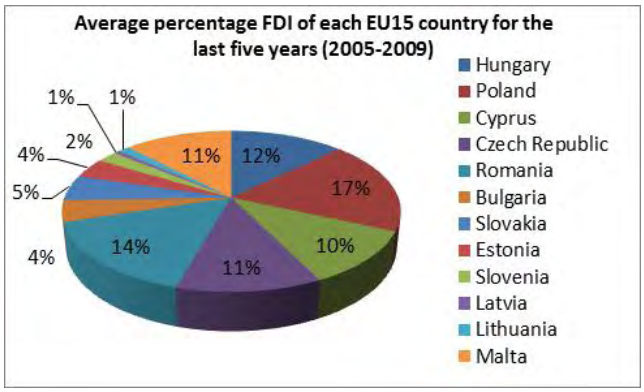
Average FDI stocks relative to GDP (1992-2009)				
Hungary	**Malta**	**Cyprus**	**Bulgaria**	**Estonia**
65%	63%	48%	33%	51%

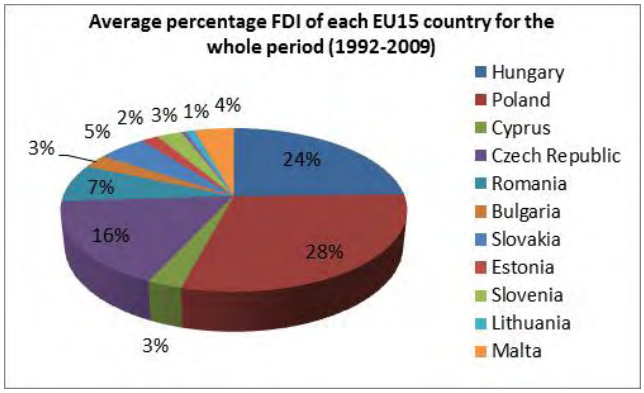
Source: Unctad for FDI stocks and Eurostat for GDP, own calculations

Having a look at the flows in absolute values from aggregate EU15 to each CEECs, one observes that the host countries have attracted increasing investment amounts throughout time. Investment started in the first half of the nineties in few CEECs, namely Hungary, Poland and the Czech Republic and it has diversified with time to the rest of the CEECs. Whereas the first half of the nineties three countries - the three above-mentioned - were attracting more than 90% of inward EU15 FDI in the last five years studied, from 2005 to 2009 nine countries attracted this same share of inward EU15 FDI. For sure, this has been

Figure 9







Source: Eurostat 2011, own calculations

partly due to CEECs accession to the EU in the 2000s.

Despite diversification, five countries get the lion's share of EU15 FDI in the last five years. These countries are Poland, Romania, Hungary, the Czech Republic and Cyprus. Of these , Poland and Hungary are the main receivers of FDI over time, with an average annual inward FDI flow of 4.600 and 3.600 million euros respectively. Cyprus and Romania have seen their inward FDI increase lately.

With regards to *FDI stocks from EU15/ FDI stocks from World*, the data shows that EU15 countries have a high profile in CEECs in terms of FDI. Their share of FDI in most CEECs ranges between 40% and 100% of total inward flows. The countries with the highest average are Malta, Hungary, Cyprus and Poland.

Table 5

Average FDI stocks from EU15 over FDI stocks from World (1992-2009)					
Malta	**Hungary**	**Cyprus**	**Poland**	**Czech Rep.**	**Slovakia**
100%*	67%	63%	59%	57%	54%
Rumania	**Slovenia**	**Lithuania**	**Bulgaria**	**Estonia**	**Latvia**
49%	46%	45%	37%	36%	35%

Source: Eurostat 2010, own calculations

** Eurostat figures for Malta give higher FDI stocks from EU15 than from World, which is not possible.*

Therefore, we can conclude that a diversification of host countries receiving investment from EU15 has occurred throughout time, although Hungary and Poland stand out as the main hosts of FDI in absolute values over the period studied. The ratio *FDI/GDP* ratio shows the **relevance of small-sized countries** as FDI host countries. A **general increase in the countries' openness to FDI throughout time is also to be noted**. The last ratio, FDI stocks from EU15 as a share of total FDI stocks from the World reaffirms the EU15 as big players in the CEECs and gives a hint about **the importance of distance when it comes to FDI**. The countries hosting FDI mainly from the EU15 are Malta, Hungary, Cyprus, Poland, the Czech Republic, Slovakia and Romania, with a share of more than 50% of FDI coming from the EU15 for the whole period for each of them .

MNMCs regional analysis

The MNMCs openness differs a lot from country to country. Three groups of countries are to be distinguished: A first group, with the highest average openness indicator during the whole period is composed of Lebanon, Jordan and Tunisia. Their average level of openness ranges from 40% to 60%. While Tunisia has historically been largely open to FDI, Lebanon and Jordan openness increased significantly since the mid-1990s. The second group is composed of Morocco, Egypt and Israel, with an average level of openness ranging from 19% to 27%. The three countries have seen their openness indicator increase gradually since mid-1990s. Finally, the third group is composed of Algeria and Syria, whose average openness is 7% and although there is a slight increase since the mid-1990s, it has not been sufficiently high to catch up with the rest of the MNMCs.

Comparing the average openness for the whole period to the average openness for the period 2005-2009, an increase of the openness ratio mainly in the first group is to be noted.

Table 6

Openness ratio: inward FDI/GDP

	Average 2005-2009	Average 1992-2009
Algeria	9%	7%
Egypt	36%	26%
Israel	34%	19%
Jordan	85%	46%
Lebanon	88%	40%
Morocco	44%	27%
Syria	11%	7%
Tunisia	71%	60%

First group: high level of openness
Second group: moderate level of openness
Third group: low level of openness

Source: FDI stocks from UNCTAD 2010 and GDP from World Bank Development Indicators 2010 (Worldbank database); own calculations

The results shown by the openness ratio do not reject the theory that small countries are more open to FDI: the three countries that form the first group – high level of openness – are small-sized. Instead, Morocco and Egypt, which have a large size, have had a moderate level of openness all along. The third group of countries is composed of a big country and a small one. Therefore, although it seems true that smaller countries perform better when it comes to FDI, this *rule* does not apply to all small countries, and there are also big countries that perform quite well. Therefore, other economic, political, social and

institutional factors must be taken into account when carrying out the final econometric analysis.

With regards to the investments from EU15 to each of the MNMCs, we have already noted in the *Data description* that the unavailability of bilateral data for each individual country has made it impossible to carry out a thorough analysis of the evolution and trends in absolute values. Average EU15 FDI figures in absolute values for the whole period of the Mashrek are higher than of the Maghreb, but the difference is not large.. Whereas Mashrek average EU15 FDI in absolute values amounts 1.300 million US $, the one ifor the Maghreb amounts 800 million.

With regards to FDI stocks from EU15 as a percentage of total FDI stocks from the World, the data points to different conclusions. Whereas EU15 countries are quite relevant for Maghreb inward FDI - with a ratio of 30% during the last five years studied, the Mashrek countries show a minor dependence on EU15 countries, although the ratio is still high and around 12%. Israel, on the other hand, receives only 5% of FDI from the EU15 approximately.

Table 7

Average FDI stocks from EU15/ FDI stocks from World (1992-2009)		
Israel	**Maghreb**	**Mashrek**
5%	19%	13%

Source: Unctad (2010) for FDI stocks from World and Eurostat (2010) for FDI stocks from EU15; own calculations

The average ratio for the last five years is similar to the one for the whole period, and thus we do not put emphasis on comparing it.

Therefore, we can conclude that the ratio FDI/GDP shows the **relevance of small-size countries as host countries of FDI, although more variables are needed to explain the location of FDI in MNMCs**. Absolute values data shows that Mashrek countries are the ones receiving most FDI from EU15 but **Maghreb countries are the ones having the highest share of FDI originating in the EU15** .

Below we list the most relevant findings on some stylized facts re;ated to FDI. Regarding the global comparative analysis, the main findings are:

Finding 1: As stated in the global comparative analysis, MNMCs have experienced a similar or even higher growth of inward FDI from EU15 countries than the rest of the world and the rest of emerging economies during the period 1992-2009.

Finding 2: However, the MNMCs share of inward EU15 FDI into emerging economies is extremely low and remains stagnant for all the 1992-2009 period.

Finding 3: Using an FDI/GDP ratio for the MNMCs and the CEECs during the 1995-2009 period reveals a lack of openness of the former region compared to the latter.

With regards to the regional analysis, the main findings are the following:

Finding 4 EU15 regional analysis: Distance to destination country and size of source countries are important variables to determine FDI performance from EU15 to CEECs. As far as FDI from EU15 to MNMCs is concerned, an important variable seems to be past colonial ties between source and host country, since investors from former mother countries seem to invest more, all other things equal, than investors from EU countries without a colonial past in MNMCs. Nonetheless, as a rule, MNMCs are not an attractive area to invest for any of the EU15 countries.

Finding 5 CEECs regional analysis: CEECs hosting high shares of inward FDI as a proportion of total investment in the country are characterized by small-size and short distance to the EU15. Throughout time we can perceive a diversification of host countries in the composition of FDI from EU15 and a general increase in the countries' exposure and dependence to such investment.

Finding 6 MNMCs regional analysis: Small size is also a relevant variable for MNMCs as hosts of a large share of FDI originating in the EU15, although more variables are needed to explain the location of FDI in MNMCs. Scarcity of data makes it hard to pursue a comparative analysis. Econometric analysis will contribute further to the analysis.

III.2. Trade in services stylised facts

International trade in services has been rising considerably in last decades. This growth can largely be attributed to the transformation of domestic economies into predominantly services economies, where services account for 70 to 80 percent of GDP. Another key factor has been a growing favorable environment for international trade, as a result of greater market openness and liberalization taken either autonomously or in the context of international agreements. Nevertheless, while trade in services has considerably expanded in absolute terms, its relative share in international trade has remained somewhat constant around 20 percent of total international trade. This is also evident in trade to GDP ratios, where trade in services as a share of GDP is significantly lower than trade in goods as a share of GDP, regardless of country size and other factors that are often associated with country's openness levels (Herman 2010).

This section complements the previous section on FDI, in setting the greater international context for EU and MNMCs trade in services, as well as a detailed analysis of the trade between the EU and MNMCs. The following comparative analysis follows *mutatis mutandis* a similar structure to the section on FDI in order to allow consistency as well as comparability. Since many of the considerations informing the choice of data and analysis of trade in services inform also those of the FDI analysis, specific reference to data and methodology will be given only when necessary in order to avoid repetition.

In recent years, the collection of trade in services data has considerably improved. Nevertheless, the measurement of services activity is far more difficult than that of goods, and suffers from numerous statistical flaws that mainly derive from the intangible nature of many services. A great deal of service transactions are not measured since they are traded across borders without any inspection or counting, such as in the case of trade through e-commerce. Another reason is that transactions which bundle together goods and services are usually measured solely as goods transactions. Thus many companies, whose core activity is in manufacturing, perform services activities but, in statistics, they are regarded

as part of the manufacturing sector (Porter 1998).[13] For these reasons data concerning trade in services to specific countries, such as the MNMCs and CEEC-10 is often lacking, and impairing longitudinal analysis.

For consistency and availability considerations, all trade in services data has been sourced from EUROSTAT's Balance of Payments databases and is recorded in Euros. Balance of payments statistics were preferred since they provide the most comprehensive source of data with respect to both trade partners and levels of disaggregation to service sub-sectors. EUROSTAT was preferred over alternative databases (e.g. OECD or country-specific national bureaus of statistics) because of the pivotal role of EU member states in the analysis, which also allows overcoming the challenges associated with using sources which are often non-comparable and missing.

a. Global comparative analysis

EU-15 international trade in services with the world has been growing since 1993 albeit at different rates. Trade has grown from 393,672 million Euros in 1992 to over 995,821 million Euros in 2009 Growth rates have been negative only in 2009 (-9%) but since then have picked up in 2010 (6%). This decline stems from the 2008-2009 global recession. Trade growth has been at its peak in 2000 (17%) and since then decreased until 2003. The sharp decrease in trade growth with the world could likely be attributed to the economic crisis in Argentina (2001-2002) reflected also in a sharp decline of trade to Latin America, as well as the burst of the dot-com bubble in mid-2000.[14]

EU-15 external trade in services growth is consistent with intra EU-15 trade from 1998 onwards, the first year for which data is available. Nevertheless, while growth trends are similar in EU-15 trade to other regions, their intensity differs.

[13] For a comprehensive discussion of the statistical challenge in measuring services, see: Lipsey, R. E. (2006). Measuring International Trade in Services, NBER Working Paper No. 12271, Cambridge: NBER

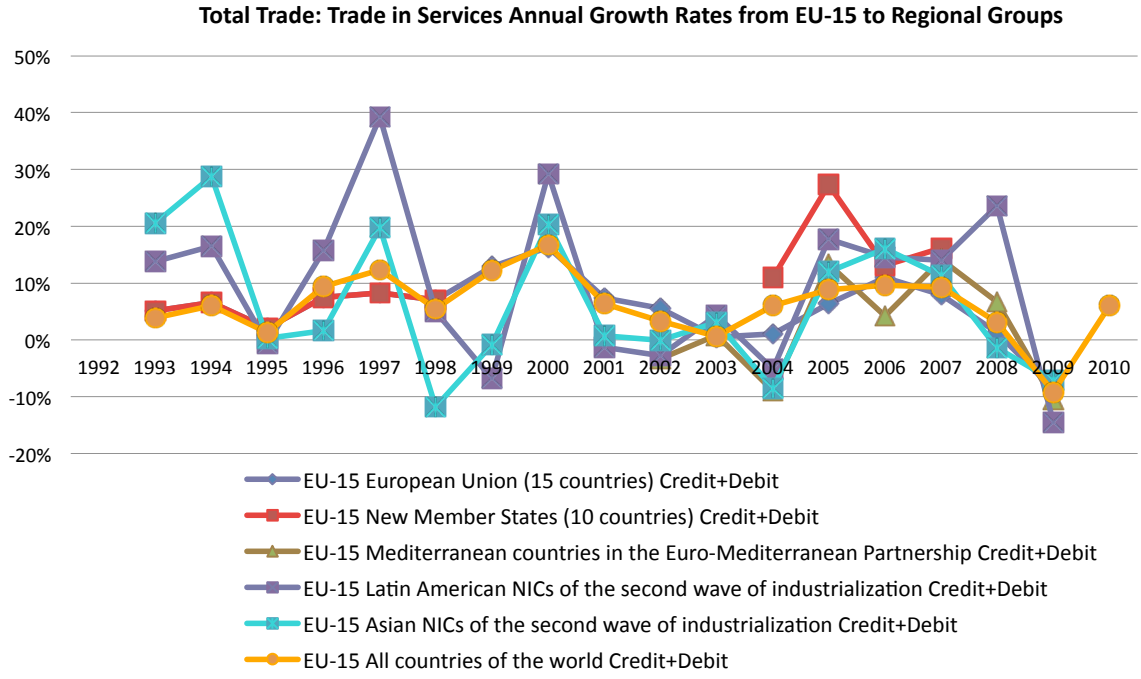
[14] For the sake of methodological consistency with the data, the charts in this section refer to trade in services exports as Credit, and to imports as Debit. Total exports and imports are treated in the charts as “credit + debit”.

Trade with CEEC-10 is available only for 2004-2009. Data for earlier years is incomplete and missing and does not allow for regional comparisons. In these years trade growth rates have been significantly higher than towards the world, reaching 57,273 million Euros in 2005 (27% growth) and 75,225 million Euros in 2007 (16% growth). While the scarcity of data for the period prior to 2004 makes difficult to gauge the effect of the CEEC-10 EU accessions, limited data for the Czech Republic, Hungary and Poland shows that trade with them grew similarly to EU-15 trade with the World between 1992 to 1998.

Trade growth trends with the MNMCs differ significantly from those with the CEEC-10 or with the World. For most of the period (2002-2009) trade growth was considerably lower (or slightly higher) than trade with the World. The major difference is with the record regarding the CEEC-10 . For example, in 2004, trade with CEEC-10 has been growing by 11 % to a level of 44,992 million Euros, but declined by 9 % with the MNMCs to 36,892 million Euros. In 2005, the growth of MNMCs trade with the EU-15 reached 15 % (41,797 million Euros) compared with growth of 29 % of CEEC-10 trade with the EU (57,273 million Euros). The data also suggests that EU-15 trade with the MNMCs has lesser impact on EU-15 trade with the world.

Trade growth with Latin American and Asian emerging economies has been surging and declining in a volatile manner throughout the period of 1992-2009. Overall, trade growth with Latin American emerging economies has been slowing downwards since 1998 onwards (from 13,904 million Euros in 2008 to 25,841 million Euros in 2009). It is evident that since 2004, trade with CEEC-10 has been growing faster than with the Latin American and the Asian sub-regions. Nevertheless, while Asian emerging economies trade has been growing slower than MNMCs trade with the EU-15, Latin American emerging economies' trade grew at a higher rate. During the period 2004-2007 (the only period comparable for all economies), average growth in trade has been much higher for CEEC-10 than for any other group of economies. EU-15 trade with CEEC-10 grew by 17 %, while Latin American and Asian emerging economies trade grew by 8 and 4 % respectively. Average trade growth with the MNMCs has been the lowest for the four groups at 3 %.

Figure 10



EU exports to CEEC-10 have grown faster since 2004 (19,545 million Euros) than for any of the other three sub-regions. Exports to the MNMCs grew at a slower pace than to Latin American and Asian emerging economies. EU-15 export growth to CEEC-10 was much higher than for the rest of the world, as was also the case for Latin American emerging economies. Export to MNMCs started to grow faster than for the rest of the world only since 2007 (20,117 million Euros), yet this might be an indication of lower export propensity to the MNMCs reflected in the response to the economic recession of recent years.

Exports from CEEC-10 to EU-15 grew by an average of 15 % in the period of 2004-2007 (40,072 million Euros in 2007). The data shows that this high growth rate is somewhat similar to the growth trend reported for trade from the Czech Republic, Hungary and Poland between 1992-1998 (11%). Export growth from the MNMCs to the EU15 was much lower at an average of 4 % for the 2004-2007 period (26,965 million Euros in 2007), and even lower if the period is extended till 2009 (1%) (27,255 million Euros). This mild and even negative import growth trend from the MNMCs has been taking place since 2002, and

was reversed positively in 2005 and 2007. EU-15 import growth from Asian and Latin American emerging economies has also been low compared with CEEC-10, at 6 and 3 % respectively. Nevertheless, these average low growth rates are the result of a sharp decline in trade growth that took place in 2004 (-20% and -25% respectively). Hence, when omitting the year 2004, trade growth has actually been higher until 2009, particularly when compared with MNMCs. While on average EU-15 import from Asian (5%) and Latin American (8%) emerging economies increased moderately throughout 1992-2009, trade growth has been volatile and significantly changed on year-by-year basis. Imports from Latin American and Asian emerging economics reached in 2009 levels of 9,232 and 5,393 million Euros respectively.

Figure 11

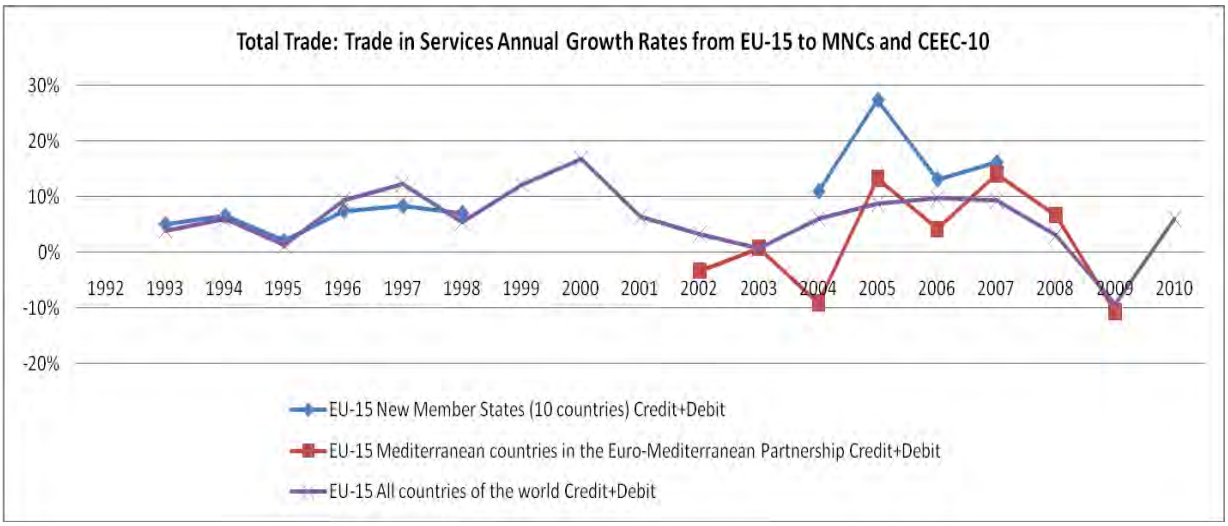
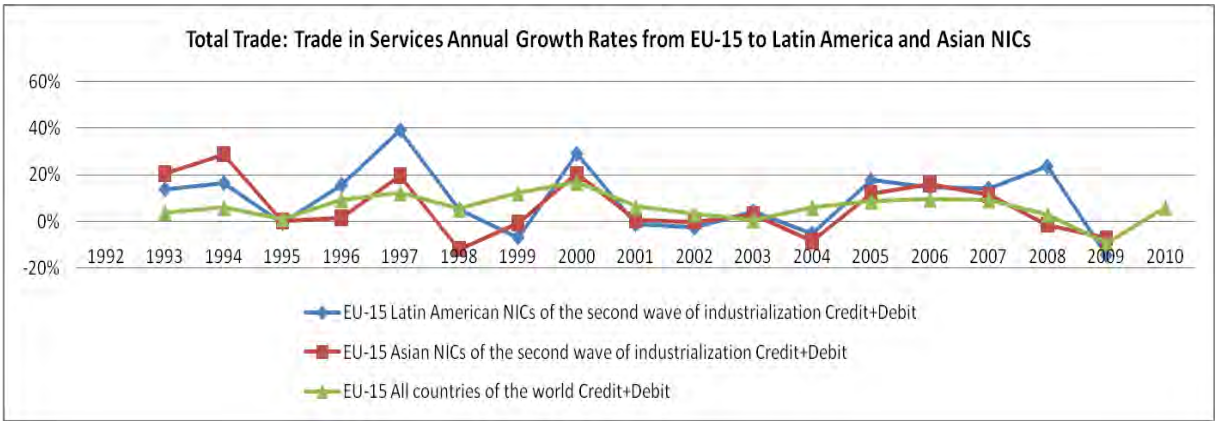


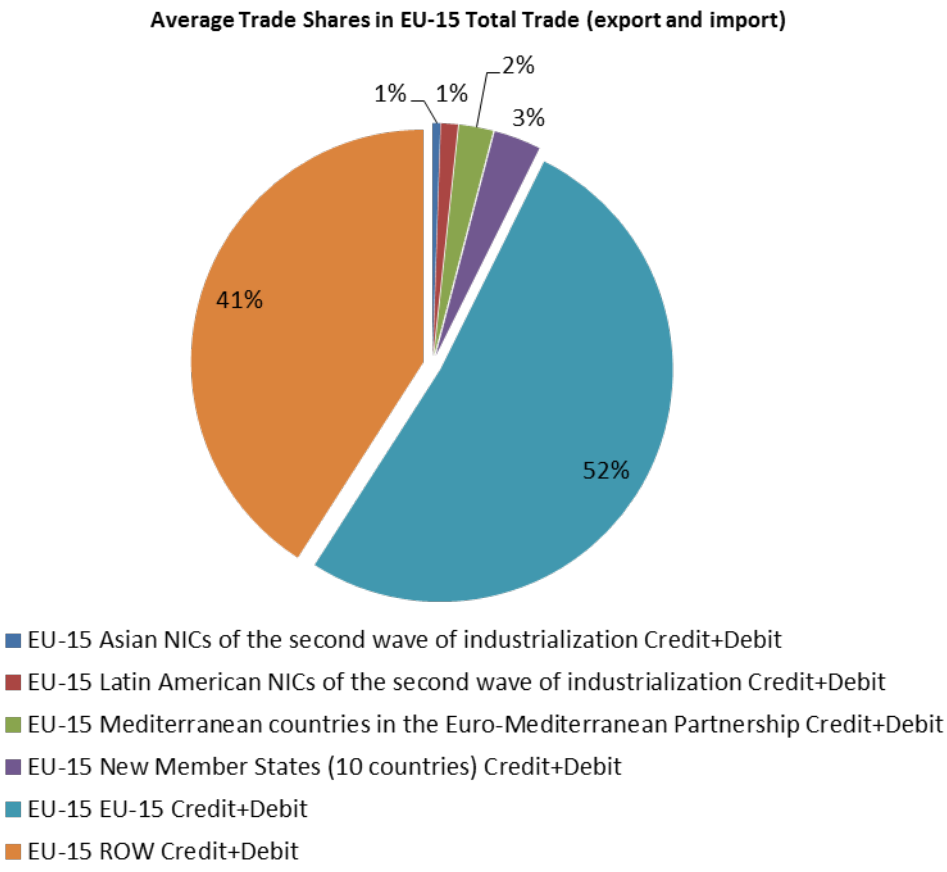
Figure 12



More than half of EU-15 international trade in services is intra EU-15 trade (1,077,894 million Euros in 2007). Despite overall trade growth, intra EU-15 trade remains stable at an average of 54 percentages of total EU-15 trade with the world. CEEC-10 and MNCs trade with the EU-15 account for a relatively smaller portion of total EU-15 trade in services (75,225 and 49,676 million Euros respectively in 2007). The share of trade with the CEEC-10 is 3 to 4 % of total EU trade, with the share of MNMCs declining from 3% in 2003 to only 2% in each of the following years. Trade with Asian and Latin American emerging economies (24,443 and 11,768 million Euros respectively in 2007) is even smaller and despite some volatility the share has been stable at around 1 % throughout 1992-2009. EU-15 trade with

the rest of the world, other than the above four regional country groups (and intra-EU trade) is mostly conducted with major economies, such as the Australia, Canada, China, Japan and the USA. Disaggregation of the above trade shares data into export and import shares yields similar results.

Figure 13

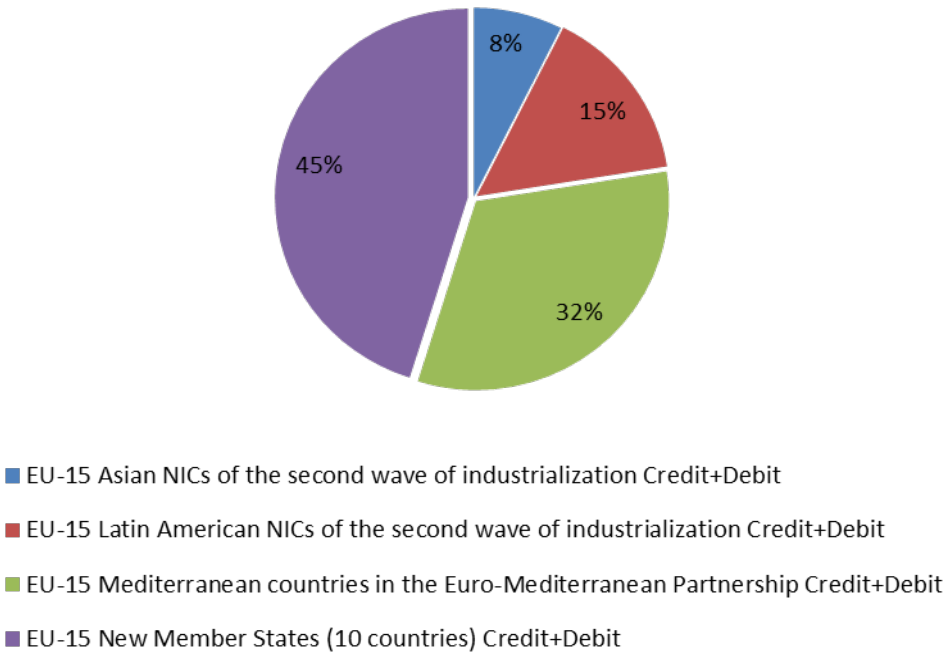


Analysis focused at EU-15 trade solely to the four regional countries groups (i.e. taken as 100%) allows for a sharper distinction into EU-15 trade with each of the groups, particularly as it isolates the effects of trade with other big economies. There are big differences of each subregion's share in total trade with the four subregions as a whole. Change of these share over time is also large . Accordingly, CEEC-10 is the most important of the 4 subregions in EU-15 trade with emerging economies, accounting on average for 45 % of this

trade in 2004-2009. While in 1992-1998, the Czech Republic, Hungary and Poland represented 42 % of all trade to emerging economies, from 2003 onwards their trade shares together with other CEEC-10 countries rose from 38 % to over 48 % by 2007. MNMCs trade shares have dropped from 38 % in 2003 to 31 % in 2007. In the same period, Latin American emerging economies trade shares reached on average 15 % , and Asian emerging markets share accounted for only 7 % of total trade.

Figure 14

Average Trade Shares in EU-15 Trade with Emerging Economies, 2004-2007



Trade to GDP ratios represent the share of international trade in domestic product and is often referred to as an index for a country's trade openness. More specifically, it indicates *de-facto* trade openness. When in the numerator we introduce trade with a specific

subregion the corresponding ratio can give us a notion of the level of the economy's openness this particular subregion abroad.

Taken as an average for 2004-2007, MNMCs trade share of GDP is 11 %, while CEEC-10 GDP trade share is 10 %. Nevertheless, disaggregation into export and import ratios of GDP, reveals that the MNMCs export more out of their GDP to EU-15 than CEEC-10 whose import and export are equally distributed.

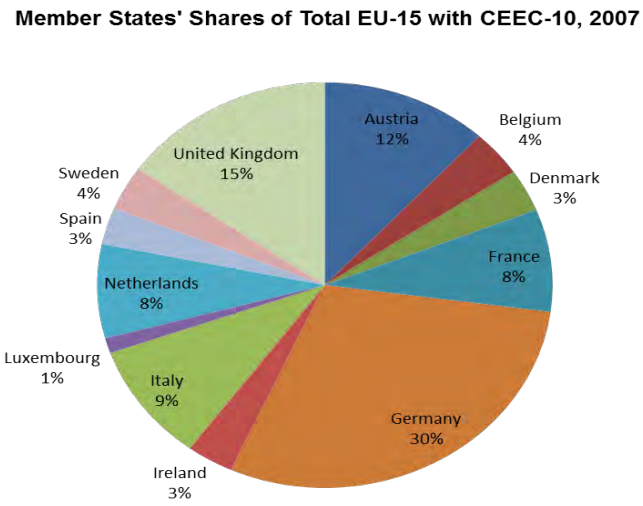
While the trade to GDP ratios seem low, they are in fact higher than the ratio among EU-15 themselves (9%) for same period. This possibly indicates that trade in services from MNMCs with EU-15 (and EU-27) is not necessarily restricted by trade barriers that otherwise have been removed only among EU Member States within the framework of the Single European Market. Furthermore, the results are consistent with similar international comparisons where trade in services ratio of GDP are lower, even in countries with similar high ratios for trade in goods.

b. Regional comparative analysis

EU-15 - CEEC-10:

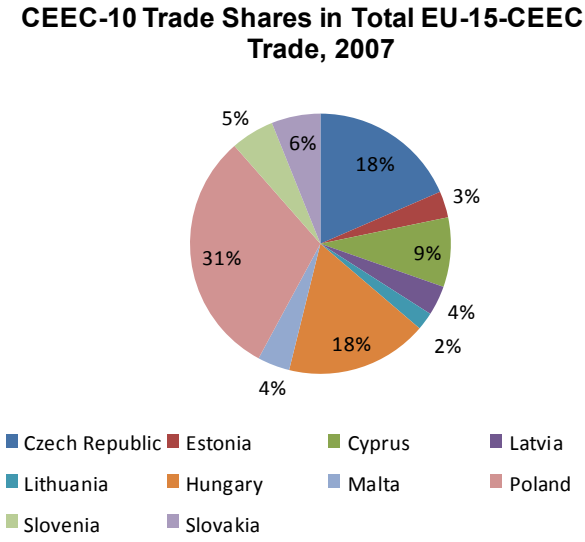
Germany (29%, 21,818 million Euros), the UK (15%, 11,246 million Euros), Austria (12%, 8,733 million Euros) and Italy (9%, 6,962 million Euros) are the main EU15 traders with CEEC-10 countries. These countries are the major importers from CEEC-10, as well as exporters of services to them. France (10%, 3,383 million Euros) and the Netherlands (9%, 3,138 million Euros) are also important exporters to CEEC-10 though to a lesser extent than the other major exporters. It is evident that Germany is the most important trade partner of CEEC-10 countries, particularly with regard to imports (37%, 15,020 million Euros).

Figure 15



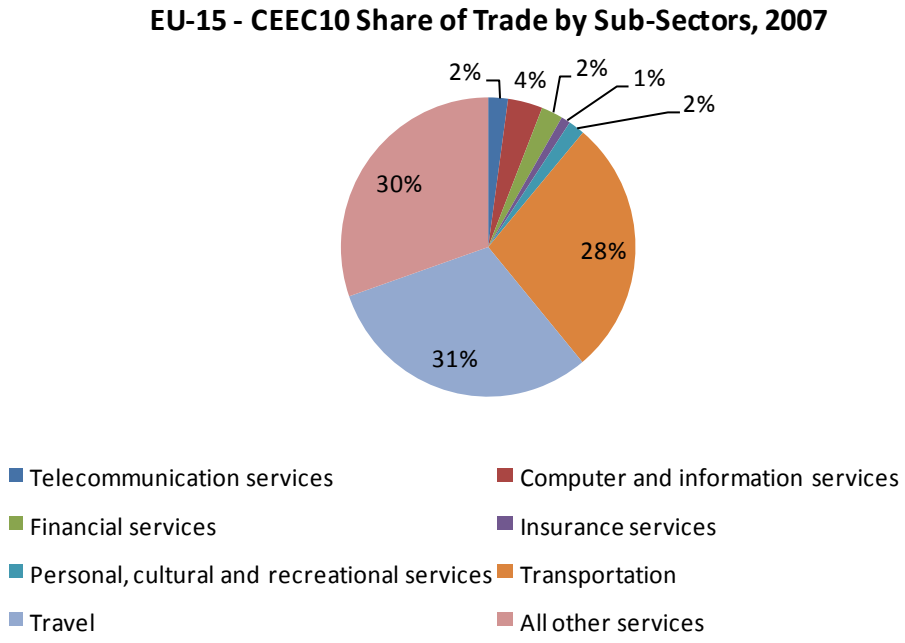
Within the CEEC-10 group, the main traders for both exports and imports with EU-15 countries are Poland (31%, 23,670 million Euros), the Czech Republic (19%, 14,250 million Euros), Hungary (18%, 13,573 million Euros) and Cyprus (9%, 6,665 million Euros). The Baltic countries trade the least with EU-15 (2-4 %). Slovakia (1,978 million Euros) and Slovenia (1,809 million Euros) export shares to the EU-15 (8% and 7% respectively) are slightly higher than their import shares.

Figure 16



Sector-specific data was extracted for several sub-service sectors: transportation, computer and information, financial, insurance, personal cultural and recreational services, travel, as well as all other service activities not reported in the other sub-sectors. The data shows that between 2004-2007 travel services, transportation services and all other services were the main service activities traded between CEEC-10 and EU-15. Air transport and sea transport are only some 20 % of all transport services, suggesting that other modes of transport services, such as rail and road, play a more important role. It is noticeable that key backbone services, such as financial and insurance services, as well as telecommunication and computer and IT services form only a minimal share of CEEC-10 trade with the EU-15.

Figure 17



Sector	Trade*	Sector	Trade*
Telecommunication Services	1,617	Computer and Information Services	2,849
Financial Services	1,769	Insurance	777
Personal, Cultural and recreational Services	1,342	Transportation	21,010
Travel	20,029	All Other Services	22,850

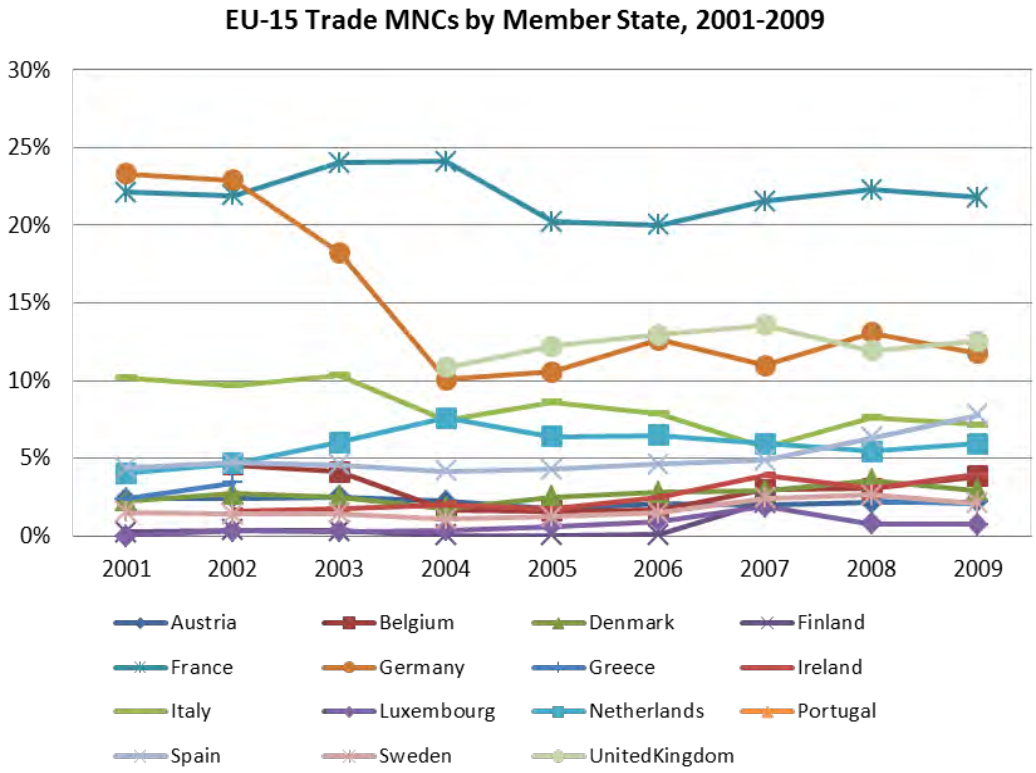
* Million Euros

EU-15 – MNMCs:

EU-15 member states' trade with the MNMCs differs from that with CEEC-10. Indeed, the UK is an important trade partner (13%, 5,956 million Euros) and so is Germany (12%, 5,584 million Euros), but to a far lesser extent than the role that play in trade with the CEEC-10. France (22%, 10,326 million Euros) on the other hand is the MNMCs main trading partner. As such, France is the main EU exporter (26%) and importer (19%) of services. While trade with the CEEC-10 seems to be influenced by geographic proximity (Austria, Germany and Italy) this is less clear for trade with the MNMCs. Spain's trade with the MNCs (3,698 million

Euros) account for 8 % of EU-15 trade, and Italy's (3,413 million Euros) and Greece's (994 million Euros) trade shares are 7 and 2 percentages respectively.

Figure 18



Country-specific data for MNMCs trade with the EU-15 is only partially available. The data is disaggregated into two main regions, the Mashrek and the Maghreb, as well as Israel. Data is also available for two countries from each of the two regions, Egypt and Morocco. MNMCs trade with the EU-15 is not distributed evenly between the Mashrek and the Maghreb. Trade is larger with the Maghreb region (32%, 15,090 million Euros)), where Morocco is a main trader, accounting for 12 % of the total trade of MNMCs with EU-15 (5,781 million Euros). Mashrek trade (21%, 9795 million Euros) is lower, with Egypt being a dominant trader, accounting for 16 percentages of all MNMCs trade with the EU-15 and 80 percentages of all Mashrek trade with EU-15 in 2009 (7,816 million Euros). Israel is also

among the largest traders of services in the region, with a share of 8 % of MNMCs trade with the EU-15 (3,855 million Euros). Nevertheless, Israel's share of MNMCs imports from EU-15 is much larger (12%, 2,322 million Euros) than its own export share (6%, 1,533 million Euros).

Table 8: MNMC Country-Specific Shares of Total Trade (Export and Import) with EU-15, 2001-2009

Country	2001	2002	2003	2004	2005	2006	2007	2008	2009
Maghreb	34%	28%	28%	31%	30%	30%	30%	32%	32%
Morocco	8%	9%	10%	11%	10%	12%	13%	14%	12%
Mashrek	20%	18%	18%	17%	19%	19%	21%	20%	21%
Egypt	13%	12%	12%	16%	17%	17%	17%	17%	16%
Israel	11%	11%	9%	9%	8%	9%	9%	9%	8%

The data on service sub-sectors shows some similarities but also differences between CEEC-10 and MNMCs trade with EU-15. As for CEEC-10, MNMCs trade is largely composed of travel services, transportation services and all other services (not specifically reported). The picture changes when total trade is disaggregated into exports and imports. Thus, travel services account for 47 % of MNMCs exports, but only to 12 % of their imports. This finding confirms the importance of tourism services for MNMCs economies. All other services categories account for much higher shares in MNMCs imports (54%) compared to export shares (26%), indicating the low propensity of MNMCs to export professional and personal services, many of which are part of these other service categories.

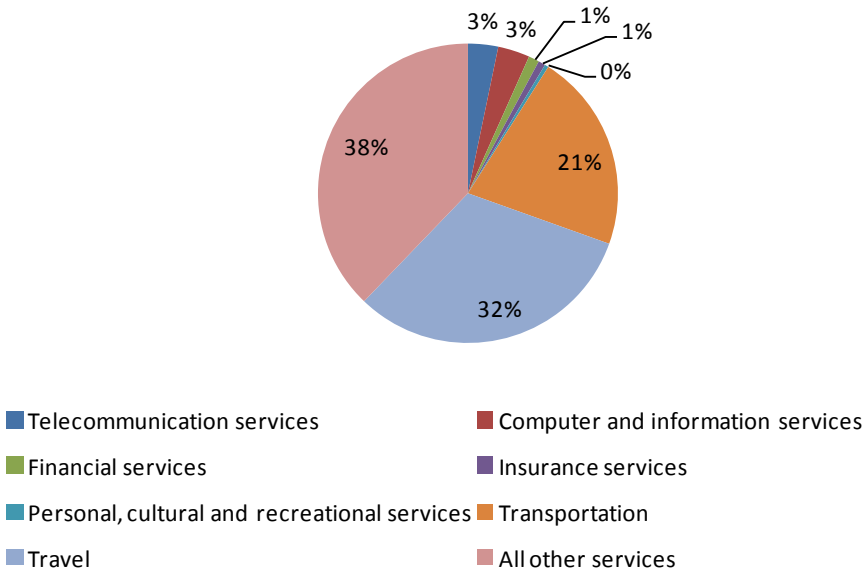
Transportation services are important in MNMCs trade with the EU-15, but their modes considerably differ from that of CEEC-10. Air transportation and sea transportation, each account for almost 40 percentages of total transportation trade. This is different for CEEC-

10, where sea and land barriers are of lesser importance, thus giving rise to other modes of transportation services, such as road and rail.

Finally, trade in backbone or infrastructure services is very low for insurance and financial services, as well as telecommunication services. MNMCs computer and IT services imports are an exception (6%), although exports to the EU-15 have a very minimal impact on overall trade in services (i.e. a 1% share only).

Figure 19

EU-15 - MNCs Share of Trade by Sub-Sectors, 2009



Sector	Trade*	Sector	Trade*
Telecommunication Services	1,539	Computer and Information Services	1,627
Financial Services	545	Insurance	360
Personal, Cultural and recreational Services	194	Transportation	10,176
Travel	15,021	All Other Services	17,924

* Million Euros

Finding 1: Since at least 2002, EU-15 trade in services with CEEC-10 has been growing at considerably higher rates than for MNMCs. The growth of EU-15 trade with CEEC-10 is both in exports and imports alike.

Finding 2: EU-15 trade in services is either intra-Community trade or directed towards large economies, such as the US, China, Japan and and the like.

Finding 3: Almost half of EU-15 trade in services with emerging economies is conducted with CEEC-10, while MNMCs share of EU-15's trade had been declining from 38% to 31% in the period 2003-2007. Within MNMCs, trade with Maghreb countries, is larger than with Mashrek countries.

Finding 4: The propensity of trading in services with the EU-15 (measured as bilateral trade to GDP ratio) is similar for CEEC-10 and MNMCs, but the latter are more export-dependent on the EU15 than the CEEC-10.

Finding 5: The relatively high propensity of trading services with the EU 15 both by CEEC-10 and MNMCs alike, when compared to intra-EU figures, suggests that trade is not necessarily restricted by barriers to trade.

Finding 6: While geographical proximity plays a greater role for CEEC-10 trade with EU-15, it plays a lesser role in MNMCs trade. Germany, the UK, Austria and Italy are key trade partners of CEEC-10, while France and to a much lesser extent Germany and the UK are key trade partners of the MNCs.

Finding 7: Transport services are an important activity for both MNMCs and CEEC-10 in their trade with the EU. It is to be noted that air and sea transport play considerable role in MNMCs trade in services with the EU15 in contrast to the huge role of rail and road transport in the case of the CEEC-10. Travel services (i.e. tourism services) are also an important activity both for MNMCs and CEEC-10.

Finding 8: It is evident that key services, particularly backbone services such as financial, insurance and telecommunication services have only a minimal share in trade in services between EU-15 and CEEC-10 and MNMCs.

IV. EMPIRICAL STRATEGY

IV.1. Model specification

a. The Gravity model

The gravity model takes its name from Newton's proposed 'Law of Universal Gravitation', which was first used by Tinbergen in 1962 to explain the evolution of international trade flows. The model, in its simplest form, claimed that trade flows could be explained by the GDP of the importer and the exporter and the geographical distance. Since then, the model has been extensively used by many authors to explain many different types of flows, including foreign direct investment ones (see Carstensen and Toubal 2003, Guerin 2005 and Razin et al. 2005). While there is a wide consensus among academics on the ability of the model to empirically explain different types of flows. Recently whilst this report was being written, Anderson and Yotov (2012) published a paper that provides some theoretical foundations to the gravity model. However, asAnderson (1979:106) and Bergstrand (1985:474) pointed out, there is a serious disadvantage associated with the fact of not having a theoretical model: the lack of predictive purposes or, in other words, its limited use for policy-making. Since mid-1970s, many authors such as Anderson (1979), Bergstrand (1985), Deardoff (1995), Evenett and Keller (2002) have explored the theoretical foundations of the model, arriving to different conclusions. This search for a theoretical foundation has produced, as Frankel (1998) argues, that 'the [gravity] equation has thus apparently gone from an embarrassment poverty of theoretical foundations to an embarrassment of riches!' (p.2).

These great theoretical concerns have not succeeded in standardizing the variables that should be included in the model - except for income and distance, which are the two variables that were in the original design of the model. Instead, different authors have

adjusted the model according to the objectives of their analysis, by adding different groups of variables.

Carstensen and Toubal (2004) aim at testing the importance of the so-called transition-specific factors for FDI flows in the CEECs. In order to do so, they divide the variables in two groups when analysing FDI in the CEECs: traditional determinants of FDI, which include market size, trade costs, plant and firm specific costs and relative factor endowments, and transition-specific determinants, which include the share of private businesses, method of privatization, risk and so forth.

Razin et al (2005) focuses on the impact of a productivity shock to FDI between OECD and non-OECD countries, and construct a (modified) gravity model by setting three different types of variables: standard country characteristics which include GDP per capita, population size, educational attainment and financial risk rating, the 'source-host characteristics' as they name it, which include FDI flows, distance and a dummy for common language, and finally the productivity variables.

In an article in 2005, S.S.Guerin uses a gravity model to explain the degree of financial integration between developed and developing countries (OECD and non-OECD). Since her main focus is the impact of geographical distance on FDI, she includes several geographical variables: distance, border dummy, latitude and landlockedness. She also includes a dummy for regional trade agreements and another dummy for currency unions, both as proxies of information and transaction costs. Finally, she also includes traditional variables such as the GDP of the source and host countries and GDP per capita. Other variables with which she augments the model are trade, common legal code, corruption and policy on FDI and telephone call traffic as a measure of information flows.

One can easily observe through these examples that although each author emphasises certain factors (i.e. transition-specific, productivity, geographical factors), the pattern of the above-mentioned analysis is clear-cut: all the studies focus on locational factors and there are a set of traditional factors which are used by and large by various authors. Several other studies (Jun and Singh (1996), Lankes and Venables (1996), Resmini (2000)),

although differing on the focus of the study and the importance that they give in each factor, they mention and consider many of those factors for their analysis.

b. Empirical Methodology

Our benchmark model takes the above-mentioned gravity model defined by Tinbergen in 1962 as a starting point - with GDP of source and host country and distance as basic explanatory variables- and adds outward flows of trade in services from source to host countries, our variable of interest. Several control variables Z_{ijt}, are gradually added to prove the robustness of the variable of interest. Given the multiplicative nature of the gravity model, our dependent variable[15] and most of the independent variables are in natural logs.

$$\ln flows_{ijt} = \alpha + \beta_1 \ln GDPo_{it} + \beta_2 \ln GDPd_{jt} + \beta_3 distcap_{ij} + \beta_4 \ln its_{ijt} + \beta_5 Z_{ijt} + u_{ijt}$$

where Z_{ijt} is a composite vector of several variables which are explained below (data subsection). *lnGDPo and lnGDPd* are the natural logs of GDP from origin and destination country. *Distcap* is the distance between the two countries and *lnlits* is the natural log of trade in services. Time dummies t_t will be added to control for the effect of global events.

Estimating panel data by OLS produces inconsistent results whenever the error term contains fixed effects, since these are serially correlated across time. In this case, the most suitable estimation methods will be those that do not ignore this correlation and correct it in such a way that they produce consistent results. This might be achieved by fixed-effects estimation, dummy variable regression – which acts like fixed effects – and random-effects estimation. The choice among random and fixed-effects will depend on mainly three issues.

The first one is *orthogonality*; that is, to know whether the time-invariant unknown variables and the control variables are orthogonal (uncorrelated). In case they are, a random-effects model suffices. In the opposite case, the random-effects will produce inconsistent results and then fixed-effects model or dummy regression variable models are

[15] See the treatment of the dependent variable below

better. The shape of the panel may also influence in the decision between random and fixed effects. In the case of a panel with large spatial-dimension and short time-dimension, a random-effects model is more suitable than a fixed-effects one. As Guerin and Manzocchi emphasise in their paper (2006:4), fixed-effects estimator produces inconsistent results in the case of short time-dimension and large spatial-dimension, which is known in the literature (Baltagi 2001) as the 'incidental parameter problem'. Moreover, by estimating our model with fixed-effects, the gravity variable *par excellence* (i.e. distance) disappears, thus leaving the gravity model without the variable that gave birth to its name.

Given that our model relies on several time-invariant variables that would disappear if using a fixed-effect method and that the model is characterised by large spatial-dimension and small t-dimension, we will assume orthogonality and use a random-effects model.

Robustness checks will be carried out in order to test the credibility of our results. In them, the endogeneity problem will be discussed, different forms of treating the dependent variable will be considered, regressions of different subsamples will be done and finally, different estimation methods such as a tobit censored method, Poisson and Arellano-Bond will be introduced.

Finally, we have addressed other concerns such as heteroskedasticity and serially correlated errors as explained below.

c. Data access and limitations

Selected countries and period

The selected countries - the EU15 as origin countries and twelve CEECs and nine MNMCs as destination countries – serve the aim of the analysis, that is, to explain FDI flows from EU to the Mediterranean Non-Member Countries and comparing it with Central and Eastern European countries. Selected countries can be seen in Table 9. Note that Belgium and Luxemburg have been merged given that Eurostat data for these two countries is jointly

collected for some years. With regard to the selected period of time, it goes from 1992 to 2009, following data availability (see Table 10).

Table 9

EU countries	CEECs	MNMCs
Austria	Bulgaria	Algeria
Belgium	Cyprus	Egypt
Luxemburg	Czech Republic	Israel
Denmark	Estonia	Jordan
Finland	Hungary	Lebanon
France	Latvia	Morocco
Germany	Lithuania	Palestinian Territory
Greece	Malta	Syria
Ireland	Poland	Tunisia
Italy	Romania	
Netherlands	Slovakia	
Portugal	Slovenia	
Spain		
Sweden		
UK		

Treatment of the dependent variable

Our variable of interest is the outward flows of FDI from each EU country to each CEECs and MNMCs in ECU/EUR. Globerman and Shapiro (2002) give two main reasons to focus on flows instead of stocks. One of them is the heterogeneity regarding FDI stock's calculation methods across countries, although this one might be reduced given that our source countries are EU countries sharing a certain level of homogeneity. Secondly, and most importantly, stocks remain largely indifferent to relatively large changes in FDI behaviour, fact that would undermine the results of our analysis.

Since our dependent variable is converted in natural logs, without any *a priori* treatment of FDI flows the zero and negative observations would be dropped out from the analysis, therefore losing valuable information. In order to tackle this problem, and following

Eichengreen and Irwin (1996) and Wei (2000), we keep the zero observations by adding up a unity in each value before performing the log transformation. Since the flows are in ECU/EUR (and not million), adding a unity is equivalent to adding one euro to gross inflows. The later does not change significantly the gross value, hence after regressions being performed without the transformation we have decided to stick with it. Another obvious advantage is that for large values of FDI, ln(fdi+1) ≈ ln(fdi) and for small values ln(fdi+1) ≈ fdi, and thus, for large values of the dependent variable the coefficients can still be interpreted as elasticities. With regards to the negative observations, we understand them as disinvestment, which tells us that the total positive outward investment has been zero and thus, we drop them from our analysis. We acknowledge that this last point might be controversial, since some investment may have taken place, despite total investment being negative. Therefore, later on when carrying robustness checks we will include both zero and negative observations to see if any significant change arises in the estimators. Moreover, we will also include the negative FDI values as explanatory variables (disinvestment affecting investment from following years) to see whether the results remain the same.

Another relevant issue regarding the dependent variable needs to be discussed, which is the overlapping of part of FDI and trade in services series: on the one hand, FDI flows include FDI in both manufactured goods and services. On the other hand, our explanatory variable of interest – trade in services – also includes FDI in services as a mode of trade (mode 3). Therefore, FDI in services appears both at the right and left hand side of the equation. One solution to that drawback would be to subtract FDI in services from total FDI. However, FDI service data for the countries analysed in this report are mostly composed of missing values. To be precise, 85% of the data are missing values. Adding them to our analysis by subtracting them from total FDI would imply that 86% of our values are missing data. Obviously, the analysis with such values would be worthless and therefore, we have decided not to subtract FDI in services and keep our dependent variable as it was. The conclusions will account for this problem.

Explanatory variables

Our hypothesis claims that the outward flows of trade in services from source to host countries play a major role in explaining the FDI flows from EU15 to MNMCs. We thus set the outward flows of trade in services as the main explanatory variable which appears in ECU/EUR from each EU15 to each CEECs and MNMCs. Unfortunately, data on trade in services for MNMCs is only available for Egypt, Morocco and Israel, which narrows considerably our analysis. Also, disaggregated data according to type of services is scant for both CEECs and MNMCs, and therefore we stick to aggregate data for our analysis.

The basic gravity determinants are market size and distance. Market size is considered to provide a valuable hint about the capability of the market to absorb incoming FDI. A proxy that is widely used to calculate market size is GDP (see Carstensen and Toubal 2004, Guerin and Manzocchi 2006 and Bevan and Estrin 2000). However, market size may not be very relevant if the objective of FDI is to take advantage of low labour costs, as it is the case of vertical FDI. That is what a study by Buch et al (2003) argues in its introduction[16]. Yet, in their results, they find GDP per capita to have a positive and significant impact on FDI in the majority of the cases (p.101). Moreover, and according to Carstensen and Toubal (2004:8), many other studies have also found a positive and significant relationship between FDI and market size. Therefore, a priori, and taking into consideration previous empirical analysis, we expect the variable to have a positive sign although its significance remains to be seen. Market size can also be proxied by other variables, such as population size (Meyer 1996) or the market size of the domestic country and all its neighbouring countries (Head and Mayer 2002, Carstensen and Toubal 2004). The latter option assumes that when investing abroad, the investing country considers the option of using the host country as a hub to the neighbouring countries. Given the little integration that have existed and still exist amongst the Euro-Mediterranean countries, we consider that taking into consideration GDP of neighbouring countries enhances the level of sophistication of the analysis but does not provide much value to it, and therefore we take GDP in million ECU/EUR of the investing and host country as proxies.

[16] Their study actually uses GDP per capita instead of GDP. However, we think that the argument is also valid for GDP.

Regarding distance, this one is often perceived in international trade literature as a proxy for trade costs (Carstensen and Toubal 2004), but Bevan and Estrin (2000) and Guerin (2005) expose in their respective papers that distance can also be a proxy for information costs. Regardless of the interpretation, the variable will be expected to have a negative sign; the further away, the lower the FDI. We have used a recurrent measure of distance, the Euclidean distance in kilometres, which measures the latitude and longitude from one capital to another.

Cultural proximity may also be interpreted as a distance measure and therefore is also thought to play a role in gravity equations measuring FDI bilateral relationships. A common language is considered an advantage when engaging into business relations, and a past colonial link generally implies commonality in some institutional or political aspects, which in turn paths the way for economic relationships. Therefore, both common language and past colonial links are generally considered two reasonable proxies for cultural proximity and are included in several analyses (Bevan and Estrin 2000, Carstensen and Toubal 2004, Guerin 2005, Guerin and Manzocchi 2006). Appendix A.1 and A.2 provides more information about the construction of these two variables. Other proxies could be a common legal system, common border, and so forth. However, given the aim of the report, we consider the two former variables to be enough for the analysis. Both variables are expected to have a positive sign, and they are introduced as dummies that take value 1 when there is a common language or a past colonial link between the source and host country and 0 otherwise. The definition taken of colonial link from the source (specified in the table below) is the following: 'a country that has had at some point in time a colonial link'.

The model is augmented by a time dummy t_t and a set of control variables Z_{ijt} explained below consisting of capital-labour endowments of the host country, skilled labour in the host country, trade and institutional variables such as political and economic reform from the host country as well.

Relative factor endowments of capital and labour, which were the cornerstone of Hecksher-Olhin's trade theory, can provide us with information about the type of FDI that is taking place. Vertical FDI is expected to be backed by a greater difference in relative factor

endowment between the source and the host country, whereas smaller differences may account for horizontal FDI. As Carstensen and Toubal (2004) notes, 'vertical MNEs arise when countries have different factor endowments and trade costs are low' (p. 7). In order to avoid a possible endogeneity bias, this variable is lagged one-period. Some studies (see Bevan and Estrin 2000 and Carstensen and Toubal 2004) complement the information that relative factor endowment provides by including unit labour cost in their analysis. Unfortunately, due to lack of data for 6 of the MNMCs - all of them except Jordan, Egypt and Palestinian territories, we have not included this variable in the analysis. Nonetheless, we consider this shortcoming not affecting our analysis dramatically, since including unit labour costs would provide us with an information - the type of FDI that is taking place in the area - that we can already acquire through the variable 'relative factor endowment'. Appendix A.3 provides more information about the construction of this variable.

The level of endowment of skilled labour is also taken into consideration in some analysis of FDI. Although it might well be that in the case of vertical FDI skilled labour is not as necessary as in horizontal FDI, many authors tend to agree on the importance of having skilled labour. According to Nelson and Phelps (1966) in Cartensen and Toubal (2004), 'educated people are better able to cope with the implementation of a new technology' (p.9). Since investment by western MNEs leads to innovation in the host country's production technology, skilled people are needed. Other authors consider education level as an important variable for economic progress (Lucas 1988, Mankiw, Romer and Weil 1992), and Barro and Lee (NBER WP num 15902, 2010:3) suggest that skilled workers are more able to absorb advanced technology. Following other authors (Razin et al 2005, Guerin and Manzocchi 2006) we have taken the database constructed by Barro and Lee, who proxy skilled labour as 'average years of primary, secondary and tertiary schooling attained by people over 25 years-old' in a five year interval. For our analysis, we take average years of total schooling, claiming that the higher the total average years of schooling, the higher the FDI levels. Moreover, we interpolate the Barro and Lee dataset in order to have values for all the years and countries (except for Lebanon and Palestinian territory, which did not have any data available in the original set)

Institutional variables such as political liberalization and economic reform taking place in developing countries are very likely to influence investment decisions. Those indicators are widely argued to affect growth and FDI (see Lucas 1993, Sachs and Werner 1995, Jun and Singh 1996, Holland and Pain 1998, Bevan and Estrin 2000, Wacziarg and Welsh 2003, Giavazzi and Tabellini 2004, Carstensen and Toubal 2004, Guerin and Manzocchi 2006).

We take the definition of political liberalization from Giavazzi and Tabellini 2004, who define political liberalization as 'the event of becoming a democracy, as conventionally defined by political scientists' (p.1298). Following a large literature on the topic, we use the variable *Polity2* in the database *Polity IV Project* as an index for democratization (political liberalization). According to the project's website, the data covers 164 countries over the period 1800-2010 and has become 'the most widely used data resource for studying regime change and the effects of regime authority'. Indeed, the same index has been used by several authors in previous studies (see Persson and Tabellini 2003, Persson 2004, Giavazzi and Tabellini 2005 and Guerin and Manzocchi 2006). The variable *Polity2* is a composite index that range from -10 to 10 and contains the following variables: regulation and competitiveness of executive recruitment, openness of executive recruitment, constraint on the executive authority and regulation and competitiveness of political participation. We, as other authors who have used the index, will create a dummy based on this variable which will take value 1 when the host country makes a permanent change to democracy (that is, changes permanently from negative to positive values) and 0 otherwise.

Economic reform is harder to define and there is less consensus on which variables represents the concept better. Several subjective indexes have been constructed and used in different studies. Giavazzi and Tabellini (2005) focus on economic liberalization, and define it as 'comprehensive reforms that extend the scope of the market, and in particular of international markets'. Whereas the first part of the definition seems to fit the concept of 'economic reform' and it is hence suitable for our analysis, the index to which they base their analysis does not perfectly suit our purposes, since it is an index that focuses a lot on trade variables (see Giavazzi and Tabellini 2005:1300). Given the fact that we already include an independent variable that deals with trade, we prefer to look for other variables

that focus more on economic reform rather than economic liberalization. In this sense, the variable suggested by Guerin and Manzocchi in their article in 2006 is closer to the concept of economic reform that we want to reflect in our analysis. They use privatization proceeds in millions of current UDS[17], available in the World Bank privatization database, and lag it one-period in order to avoid endogeneity bias. Hence, following their approach, we will use this variable as a proxy, complementing the World Bank database with the PRIVMEDA database for MNMCs, which relies on other sources aside from the World Bank and hence offers more complete information about the privatization proceeds for the MNMCs countries. We will convert the data to million Euros and lag it one period in order to correct for any possible endogeneity bias.

Table 10 provides with the data availability and the sources of each variable.

Table 10

Variable	Data availability	Source
Bilateral flows foreign direct investment	1992 to 2009	Eurostat and OECD database 2011
GDP	1992 to 2009	Eurostat database 2011
Distance	1992 to 2009	CEPII database 2011
Dummy common language	1992 to 2009	CEPII database 2011
Dummy colonial link	1992 to 2009	CEPII database 2011
Relative factor endowments	1992 to 2009	World Bank Development Indicators (WDI, 2011)
Skilled labour or education level	1992 to 2009in a five year interval	Barro and Lee website
Political stability	1992 to 2009	Polity IV Project
Privatization proceeds	1992 to 2009	PRIVMEDA and Worldbank

[17] http://rru.worldbank.org/Privatization/Methodology.aspx

Bilateral flows of imports from EU to CEECs and MNMCs	1992 to 2009	Eurostat 2011
Bilateral trade in services from EU to CEECs and MNMCs	1992 to 2009	Eurostat 2011

IV.2. Econometric findings

We begin the description of our results with a description of the basic gravity model including the GDP of the host and source country and the distance. We have followed a progressive strategy of adding different sets of relevant covariates. As we expected, all three variables are significant at 1% significance level and with the expected sign. GDP of both host and source country are positively correlated with FDI and the higher the distance between the host and source country, the lower the FDI. Firstly, we have tested whether fixed effects were preferred to random effect and found evidence from Hausman test is suggestive of using random effects.

Then we add our variable of interest, trade in services, which has been lagged one period in order to avoid contemporaneous recursivity with the dependent variable. Importantly the variable appears to be completely insignificant. We then proceed to add different controls to see whether the volume of trade in services becomes relevant. Table 12 shows the trade in services coefficient and significance accounting for different controls and Appendix B.1 shows all the coefficients for all variables included in the model.

We first control by cultural factors such as the fact of having been a colony and common language, and in both cases, we find that our variable of interest – trade in services – continues being insignificant. Interestingly enough, cultural factors seem to be insignificant as well and even the interaction between trade in services and the two variables gives insignificant coefficients. This result differs significantly from most trade and FDI analysis done so far with gravity-models and suggests that cultural factors are not very relevant when it comes to investment, or at least, they are less relevant than other factors such as distance, GDP and so forth. Indeed, if we perform a simple comparative analysis between the host countries that shared a colony and list of FDI receivers, we find that most of the

host countries that were colonized at some point in time tend to be placed at the bottom of the FDI receivers' list.

Table 11

Colonial relationships		Top to bottom receivers in MNMCs		Top to bottom receivers in CEECs	
Source c.	**Host c.**	**Host country**	**%***	**Host country**	**%***
Austria	Czech Rep	Egypt	44%	Poland	28%
Austria	Slovenia	Morocco	34%	Hungary	24%
France	Algeria	Israel	27%	Czech Republic	16%
France	Lebanon	Syria	8%	Romania	7%
France	Morocco	Algeria	6%	Slovakia	5%
France	Syria	Tunisia	6%	Malta	4%
France	Tunisia	Lebanon	5%	Cyprus	3%
Germany	Poland	Jordan	1%	Bulgaria	3%
Greece	Cyprus	Palestinian territory	0%	Slovenia	3%
Sweden	Estonia	AVERAGE	15%	Estonia	2%
UK	Cyprus	*Source: Eurostat, own calculation*		Lithuania	1%
UK	Egypt			Latvia	0%
UK	Israel			AVERAGE	8%
UK	Jordan			*Source: Eurostat, OECD, own calculation*	
UK	Malta				
UK	Palest.				
Source: own calculation					

Note: Countries are coloured depending on whether they are below or above the average %.

* FDI% is the FDI flows from aggregate EU15 to a host country compared to the total FDI flows in the respective region (CEECs or MNMCs)

This would confirm the regression results that give the colony dummy variable an insignificant effect. It is worth noticing that most of the countries coloured in red in the first column are relatively small countries. Since the effect of the size market is already caught by the GDP of the host country, it seems reasonable for the colony dummy variable to be insignificant.

Labour and education skills are then added to the model. Labour skills are statistically significant and by adding them, the volume of trade in services becomes significant at 5% level and shows an economically significant coefficient of 50%. In other words, 1% increase in trade in services increases FDI by 0.5%.

The relative capital-labour ratio, which proxies labour skills, appears to have a positive correlation with FDI, with a coefficient of 119%.. This confirms that FDI between Europe

and its neighbours is of a vertical kind, that is, to get advantage of the cheaper labour costs. Education skills, instead, happen not to be statistically significant, although later on, with the inclusion of further controls, they will turn out to be significant.

Adding a control for economic reform (privatization proceeds) does not significantly increase the trade in services coefficient. Besides, the privatization proceeds coefficient is statistically insignificant, which might be due to the fact that its impact is already absorbed by the labour and education skills.

We then control for political reform by adding a dummy variable which differences between democratic and non-democratic countries as well as an interaction between trade in services and the political dummy. Both variables are significant at 1% level and increase the significance of trade in services up to 1% level as well. Trade in services' coefficient increases up to 146%. Surprisingly, the interaction variable highlights a significant decrease of the impact of trade in services in FDI in democratic countries (compared to non-democratic ones), from 146% to 23%.

Also, by controlling for political reform, education skills appear to be significant at 1% level and negatively correlated to FDI, with a coefficient of 80%.

Finally, we add time dummies in order to prevent spurious relationship happening between the explained and explanatory variables. Generally, time dummies are significant and slightly increase trade in services coefficient up to 183%.

A Breusch-Pagan test reveals the presence of cross-panel heteroskedasticity (X^2=80.81, p=0.00), although it is not a significant problem since its correction with robust-standard errors do not significantly change the results. The Wooldridge test for autocorrelation cannot reject the null of no first order serial correlation (F=0.640, p=0.4248) and so no additional measures are taken. Finally, we also conduct the Phillip-Perron test for unit roots with and without time trend and we soundly reject the null of unit roots. All three tests can be seen in Appendix B.2.

Table 12

	RANDOM-EFFECTS									
coefficient	0.335	0.271	0.269	0.356	0.500**	0.522**	0.575**	0.427*	1.466***	1.829***
p.value	(0,132)	(0,234)	(0,238)	(0,118)	(0,027)	(0,022)	(0,045)	(0,066)	(0,001)	(0,000)
Controls										
basic gravity variables (GDPs and distance)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
cultural factors										
colony	-	✓	✓	×	×	×	×	×	×	×
interaction colony	-	-	✓	×	×	×	×	×	×	×
language	-	-		✓	×	×	×	×	×	×
labour and education skills										
labour skills	-	-	-	-	✓	✓	✓	✓	✓	✓
education skills	-	-	-	-	-	✓ *(insig)*	✓	✓	✓	✓
economic reform	-	-	-	-	-		✓ *(insig)*	×	×	×
political reform										
dpolity2	-	-	-	-	-	-	-	✓	✓	✓
interact politlaglits	-	-	-	-	-	-	-	-	✓	✓
time dummies	-	-	-	-	-	-	-	-	-	✓

a. Robustness checks

Endogeneity

Endogeneity problems can arise when one of the key assumptions for the estimators to be consistent - $Cov(u,X)\neq 0$ – is violated. A common solution to circumvent it is to find an instrumental variable which is correlated with the endogenous variable whilst simultaneously having no correlation with the error term. Sometimes the endogenous variable's own lags suffice and the problem is solved. However, if data does not vary significantly through time, lagging an endogenous variable might not be a suitable instrument. Moreover, for some variables, the choice of instruments is not easy, and using weak instruments may also have a negative impact on the analysis. In those cases, the Granger causality test may give us some insights about the causality direction between two variables and the need to find instruments.

In our analysis there are three variables which may potentially suffer from endogeneity problems: the relative capital-labour ratio, trade in services and GDP from destination country. Regarding the first variable – the relative capital-labour ratio- the main argument for endogeneity would be the fact that the relative capital-labour ratio can be influenced by the type of FDI taking place in the country. In order to solve the problem, we have resorted to the variable's own lag. With regards to trade in services, there is no consensus among scholars about the causality between trade and FDI, and it is reasonable to think that they influence each other. In order to avoid the two-direction causality, we have also used trade in services' own lag. However, and since this variable is our variable of interest, we want to make sure in here that the endogeneity problems are not persistent and that lagging the variable is enough to avoid the endogeneity problems. For this purpose we perform the Granger causality test. We first regress the log of FDI on its first lagged value and the first lagged value of trade in services[18]. As the table below shows, trade in services plays a significant role in FDI, as its coefficient and p-value indicates. We then perform the Granger causality test in the opposite direction and the result is that whereas FDI's lagged

[18] The lag length was chosen after testing with several alternative lag structures.

value is also significant at 1% level, its coefficient is extremely low. Therefore, the Granger causality test indicates that endogeneity exists but it may not be a major problem in our analysis. Lagging the explanatory variable is therefore enough to assure that endogeneity problems do not cause our estimators to be biased.

Table 13

Variable	FDI	TS
L.FDI	0.310***	0.006***
	(0.000)	(0.003)
L.TS	1.316***	0.897***
	(0.000)	(0.000)
N	1724	1725
R2	0.2541	0.9298

Significance levels: *10% **5% ***1%
Note: p-values are in parenthesis. Both variables are expressed in natural logarithms

Finally, we use GDP of the destination country. As in Medvedev (2006:26) most direct cause for endogeneity in the case of GDP may arise because domestic investment financed through FDI is included in the definition of GDP. He also emphasizes a more straightforward argument claiming that a country's long-run growth rates, represented by GDP, are likely to be influenced by FDI. Lagging this variable is not considered a good solution to avoid potential endogeneity problems since the variance of its log through time is rather small. Other instruments might be available although they are hard to find. Therefore, before searching for them, we might want to use the Granger causality test to gauge the importance of the endogeneity problem between the mentioned variables. Once again, the test, shown in the table below, confirms that despite causality running both directions, the impact of FDI in GDP is negligible, amounting to 0.07%. Bearing these results in mind, taking into account the difficulty exposed in the literature to find good instruments and the fact that several FDI analysis have taken GDP as an exogenous variable, we leave GDP in the model.

Another minor point robustness check refers to the effect of GDP pc in the gravity equation. Importantly, we find as portrayed in Appendix 7 that both GDP of origin and destination is insignificant.

Table 14

Variable	FDI	GDP
L.FDI	0.473***	0.0007***
	(0.000)	(0.003)
L.GDP	0.935***	0.978***
	(0.000)	(0.000)
N	2821	2924
R2	0.2595	0.9881

Significance levels: *10% **5% ***1%
Note: p-values are in parenthesis. Both variables are expressed in natural logarithms

The dependent variable

As mentioned before, when constructing our dependent variable we have treated negative values as disinvestment and therefore excluding them from our analysis. We are aware that this aspect may be controversial and that accounting for the negative values might lead to different results of our analysis if the distribution of the variables is largely affected.

In order to test for the robustness of our previous results, we have carried on a second regression analysis where the dependent variable includes both negative and positive values. Given the fact that natural logs of both dependent and independent variables are taken, we have followed Yeyati (2003) in transforming the dependent variable to natural logs while preserving the negative values. Yeyati's solution is as follows:

$$lnFDI = ln(|fdi|+1) * sign(fdi)$$

The results are shown in the table below (to see the extended results, see Appendix B.3 and the correspondent test in Appendix B.4). The table shows a comparison between the results when the dependent variable takes negative values as zero investment (column A) and when it leaves negative values as such (column B).

Table 15

	A	B
coefficient	1.829***	2.645***
p.value	(0,000)	(0,000)
Controls		
basic gravity variables (GDPs and distance)	yes	yes
cultural factors		
colony	no	no
interaction colony	no	no
language	no	no
labour and education skills		
labour skills	yes	yes
education skills	yes	yes
economic reform	no	no
political reform		
dpolity2	yes	yes
interact politlaglits	yes	yes
time dummies	yes	yes

As it can be seen, there is a difference in the economic impact of trade in services of 82% (0.816). However, what is important to acknowledge in here is that the impact of trade in services to FDI is clearly relevant and statistically significant, regardless of the treatment of the dependent variable. The R-squared is also diminished.

Another possibility would be to include negative values as an explanatory variable with one period lag (and with natural logs). The logic behind this argument is that it could well be that the amount of investment of a certain year is influenced by disinvestment in the previous period. However, adding the lag of the disinvestment variable to the model has no impact on FDI and the variable is completely insignificant (coefficient=0.045, p-value=0.232).

Controlling by region and FDI levels

A drawback of pooled models is that they force the entire sample to have identical coefficients. This might imply that the aggregate results mask some important sub-trends depending on the region, or on whether countries have been successful in attracting or not FDI. There are two main ways of dealing with this issue. One of them would entail performing subsample analyses for each particular group. The other one would be to include additional variables that control for these aspects. Whereas subsampling would give

us more detailed results about the change in coefficients of each variable, the dummy controls are more convenient for our analysis given that we are mainly interested in the change of one variable: trade in services.

Controlling by region

We have added a regional dummy variable which takes value one if the country belongs to the CEECs and zero if it belongs to MNMCs. Given that the trade in services data is only available for three MNMCs – Egypt, Morocco and Israel – we don't split the region further. The results below show that there is a significant difference of the impact of trade in services on FDI depending on the region (column 2). The impact of trade in services on FDI for CEECs is smaller than for the MNMCs. Specifically, trade in services in a country within the Mediterranean region have an average impact of 163% on FDI; that is, for 1% increase in trade in services, FDI increases by 163%. Instead, the impact for countries from Central and Eastern Europe is 62%. Note that both political dummies and education variable are omitted from the model, since they are highly correlated with the region and their effect is therefore already captured by the regional dummy. The R-squared is slightly higher and around 25% and the coefficients for most variables do not change significantly from the original model (column 1); it seems therefore that controlling by region has a similar impact than controlling by political situation and education skills.

Table 16

Independent variables	Label	1	2
GDP origin country	**lgdpo$_{it}$**	1.876*** (0,000)	1.752*** (0,000)
GDP destin country	**lgdpd$_{jt}$**	1.435*** (0,000)	1.141*** (0,001)
distance	**ldistcap$_{ijt}$**	-2.846*** (0,000)	-2.514*** (0,000)
lag trade in services	**laglits$_{ijt}$**	1.829*** (0,000)	**1.630*** (0,000)**
relative factor endowments	**laglrkl$_{ijt}$**	1.126*** (0,009)	0.975** (0,018)
average years of schooling host co.	**iyr_sch$_{ij}$**	-0.626** (0,017)	-
whether host country is a democracy or not	**dpolity2$_{jt}$**	12.051*** (0,000)	-
interaction laglits polity2	**laglitspolity**	-1.368*** (0,001)	-
timedummy	**timedummy**	yes	yes
dummy region	**dregion**	-	20.396*** (0,005)
interaction region laglits	**laglitsdregion**	-	**-1.015** (0,011)**
	num. Obs	1658	1743
	Adj. R^2	0.2463	0.2535

Note: The p-values are in parentheses

** Significant at the 10% level*

*** Idem, 5%*

**** Idem., 1%*

Controlling by FDI levels

As briefly noted above, variables explaining FDI might exhibit different coefficients depending on whether the country has or has not been successful in attracting FDI. In order to account for this possibility, we have first divided the countries between high and low levels of FDI. In order to do so, we have calculated the average FDI (in natural logs) for every country and calculated the average value for all the countries. Then, we have split the sample between countries whose FDI levels were above average and countries whose levels were below average. We have then created a dummy that takes value one for countries with high FDI levels and value zero otherwise (See Appendix B.5 to see ranking of countries). The results (below, column 2) show a positive and significant impact of FDI levels to the coefficient of trade in services. Countries with higher FDI levels see their FDI

levels much more affected by an increase in trade in services than countries with low FDI levels. The difference between those two groups of countries is of 10 percentage points. Therefore, 1% increase in trade in services in countries with high FDI levels will see their FDI levels increase by an average of 1.79%, whereas the number decreases to 168% for countries with low FDI levels. One interpretation is that FDI, as noted in the literature, has also a positive impact on trade in services. Adding this control makes the R-square increase up to 26% and does not have a significant influence on the rest of the variables (column 1).

Table 17

Independent variables	Label	1	2
GDP origin country	**lgdpo$_{it}$**	1.876*** (0,000)	1.924*** (0,000)
GDP destin country	**lgdpd$_{jt}$**	1.435*** (0,000)	0.983** (0,015)
distance	**ldistcap$_{ijt}$**	-2.846*** (0,000)	-3.051*** (0,000)
lag trade in services	**laglits$_{ijt}$**	1.829*** (0,000)	**1.689***** (0,000)
relative factor endowments	**laglrkl$_{ijt}$**	1.126*** (0,009)	1.061** (0,015)
average years of schooling host co.	**iyr_sch$_{ij}$**	-0.626** (0,017)	-0.529** (0,025)
whether host country is a democracy or not	**dpolity2$_{jt}$**	12.051*** (0,000)	11.004*** (0,000)
interaction laglits polity2	**laglitspolity**	-1.368*** (0,001)	-1.380*** (0,001)
timedummy	**timedummy**	yes	yes
interaction FDI levels laglits	**laglitslevelfdi**	-	**0.102**** (0,025)
	num. Obs	1658	1658
	Adj. R^2	0.2463	0.2685

Note: The p-values are in parentheses

** Significant at the 10% level*

*** Idem, 5%*

**** Idem., 1%*

Econometric methodology

Our random-effects method is based on a normal distribution, where values range from minus infinite to infinite. Instead, FDI flows data, for their nature, are censured at a certain value, and, as we have defined it in this report cannot take values lower than zero.

Therefore, the normal distribution might not be the most adequate in our analysis. In order to check whether assuming it may interfere in our results, we have carried on the analysis using other estimators: a Tobit left censored estimator and the Poisson estimator. The first one aims at estimating the relationship between variables when the dependent variable is either left or right (or both) censored. Given that our dependent variable is – as explained above - both left and right censored, this method seems to be adequate for the distribution of our dependent variable. With regards to the Poisson estimator, it also assumes that data generation process (dgp) does not fit the convention +- infinity, and therefore, its distribution is likely to be skewed. Despite being normally used for count data, it can also be used with continuous data. As Silva and Tenreyro (2006) note in their paper, the estimator's consistency in the case of continuous data is preserved.

The following table provides us with the results of the regression (to see the complete regressions for Tobit and Poisson see Appendix B.6). Column A pictures the results using a random-effects method. Column B uses a Tobit estimator and column C a Poisson estimator. We have only included here the coefficients of our variable of interest. However, all the coefficients and variables taking part in the analysis can be found in the above-mentioned appendix.

Table 18

	A	B	C
Elasticity*	1.829***	1.888***	1.13***
p.value	(0,000)	(0,000)	(0,003)
Controls			
basic gravity variables (GDPs and distance)			
GDPo	yes	yes	yes
GDPd	yes	yes	yes
distance	yes	yes	yes
cultural factors			
colony	no	no	no
interaction colony	no	no	no
language	no	no	no
labour and education skills			
labour skills	yes	yes	yes
education skills	yes	yes	yes
economic reform	no	no	no
political reform			
dpolity2	yes	yes	yes
interact politlaglits	yes	yes	yes
time dummies	yes	yes	yes
Num obs	1658	1658	1682
R2	0,2463	-	-

* The poisson coefficient, in order to be interpreted as elasticity (like the other coefficients) needs to be exponentiated. This is why we have written 'elasticity' instead of 'coefficient'.

As it can be seen, there are differences in the elasticities according to each estimator, explained by the different assumption in the distribution of the coefficient. In any case, the three estimators show a positive and significant coefficient.

Below we summarize the most relevant econometric findings:

Finding 1: trade in services affects FDI in a positive and significant way, regardless of the econometric method used (random-effects, Tobit or Poisson) and the definition of the dependent variable (including negative values or not).

Finding 2: As expected basic gravity variables – GDP of host and source country and distance – are statistically significant in explaining FDI levels. Importantly, cultural factors such as colonial past and common language are not a relevant variable to determine bilateral FDI, although, according to the stylized facts, they are indeed relevant to determine FDI to the region as a whole.

Relative-factor endowment and the level of skilled labour appear to be important factors and suggest that FDI is of a vertical type, that is, FDI serves the aim of lowering production costs rather than seeking for new markets. Economic reform is revealed to be insignificant, and the analysis suggests that this is due to the fact that its impact is already captured by the relative-factor endowment variable. Democracy influences FDI positively and time dummies correct for time trend in the analysis. Finally, successful countries in attracting FDI show a higher impact of trade in services on FDI.

Finding 3: Results of the report are subject to trade in services data limitations for the MNMCs which has prevented us to make a more detailed analysis with disaggregated data. Other difficulties in data such as FDI data treatment, and the lack of a liberalization of trade in services index for all the period covered have complicated our analysis and have prevented the researchers to be more precise in the results.

V. CONCLUSIONS

V.1 Concluding remarks

By launching the European Mediterranean partnership (EMP) in 1995, the EU set the ambitious aim of integrating Northern, wealthy, industrialized countries with south Mediterranean countries of low-middle income. The main economic target of the Barcelona Declaration was the creation by 2010 of a European-Mediterranean (EuroMed) free trade area (FTA), by means of a set of bilateral Association Agreements signed between the EU and Mediterranean partner countries (MNMCs)

The liberalization process envisaged by the EMP consisted of the total removal of tariff barriers on industrial goods . Only very recently some progress has been done regarding agriculture and this mostly with some specific countries (e.g. Israel). Later the ENP spoke of a gradual liberalization of trade in services and investments. The aim was to consolidate the existing access on a preferential basis, with provisions for review at some time after the agreement has come into force

The initiative of the ENP aimed to complement the EMP in order to consolidate and not substituting it. The ENP introduced an additional objective for MPCs and that was the prospect of "a stake in the internal market" The new policy aimed to achieve a "deep integration" with EU's neighbors, by moving from "negative integration" (i.e. total removal of trade obstacles) towards a process of "positive integration" (the creation of new instruments and institutions to further economic relations)

The liberalization process contemplated in the ENP regarding the services sector and investments has so far been hardly significant. Bilateral negotiations on the liberalization of services and the right of establishment had been launched with Egypt, Israel, Morocco and Tunisia but they are scheduled to take longer than expected. Israel and Morocco are marked as potential pioneers to sign such an agreement in the future. the focus on trade has almost monopolized the attention of policy makers as far as economic integration is concerned, pushing other relevant economic aspects such as FDI into the background (maybe with the honourable exception of the creation of the quite successful FEMIP, under the umbrella of the publicly-funded EIB). Much literature has been devoted in studying these two phenomenon, although most analysis have treated them as two separate concerns.

The aim of this report has therefore been to prove that those two concerns are actually intertwined and that enhancing trade in services (i.e. actually an important trade policy refor *per se*) is crucial to boost FDI levels. Using a gravity model, which has corroborated the importance of market size and distance when it comes to FDI, our analysis has proved that trade in services exert a positive and significant impact on FDI in Egypt, Morocco and Israel, and that therefore the EMP and the ENP should embrace liberalization of trade in services in its agenda in order to contribute to economic integration and growth in the Mediterranean Area.

The stylized facts reported in the study have shown that the MNMCs share of inward EU15 FDI compared to emerging economies is extremely low and has remained stagnant for all the analysed period (1992-2009). The MNMCs are still a not very attractive area for investors coming from the European Union (with the exception, for obvious reasons, of the

energy sector). MNMCs prefer other emerging economies such as CEECs, East Asia or Latin-America.

The econometric analysis in this report has verified that trade in services are a key variable to FDI promotion and it exerts a positive and significant influence. Specifically, the average impact of trade in services to FDI amounts to 183% (for 100% percentage change in trade in services, FDI increases 183%). Different robustness checks confirm the positive and significant impact of trade in services to FDI, although some of them pose a challenge to the above-mentioned coefficient. Our first control makes sure that endogeneity of some variables such as GDP, trade in services and relative-factor endowment are not a problem for our analysis. Different treatments of the dependent variable are introduced, in which negative values are considered as such and not as zero values (disinvestment). The positive effect and significance of trade in services is preserved although its coefficient shows a higher impact amounting to 265%. Adding regional controls confirms that trade in services' impact differs between CEECs and MNMCs, being higher for the latter (coefficient of 163% versus 62%). Besides, this control captures the effect of political variables, and as a consequence it renders them insignificant in the analysis. Countries that have been successful in attracting FDI also show a greater impact from trade in services. Whereas FDI in successful countries increases by an average of 179% for every percentage change in trade in services, unsuccessful countries' average increase is of 168%. Finally, we see that Tobit and Poisson estimators, which account for a different distribution than the random-effects method used, result also in a positive and significant impact of trade in services to FDI. Tobit estimator gives a slightly higher coefficient (189% compared to 182% with random effects) whereas the Poisson estimator gives a lower coefficient (113%).

These robustness checks, while confirming the positive and significant impact of trade in services on FDI in CEECs and MNMCs, also raise awareness of the difficulty of estimating the impact of our variable of interest to FDI in a concise way. These analyses suggest that the coefficient of trade in services is between 113% and 265%, which is a wide range. Nonetheless, a more concise estimation is difficult given the limitation of data faced when carrying on the analysis. As mentioned in the report, bilateral data of trade in services for

MNMCs was only available for Egypt, Morocco and Israel. This has narrowed down our analysis in a significant way. A further analysis with disaggregated data was also impossible due to lack of disaggregated trade in services data. Finally, a more precise analysis based on a World Bank index of liberalization of trade in services was not possible due to the incompleteness of the database, which is still under construction and only holds data from 2006 to 2009.

V.1Policy implications

Our results suggest the existence of robust effect of trade in services on FDI that lies between 1.1 to 2.6, suggesting that a 100% increase in trade integration in an area can further economic integration in a magnitude of 110-260%. Differences in specification and causality concerns do not appears problematic and overall suggest that economic policy should pursue further trade integration by easing barriers to economic activity in the region.

Why is this result so significant in policy terms? What precautions should be taken when contemplating the signature of trade agreement in services? The first thing we know is that it will have to conform the rules of GATS and foremost to take the form of a Free Trade Area In this context it must be reminded here that services can be supplied in four different ways ("modes" in GATS terminology): cross-order supply, consumption abroad, commercial presence, and presence of natural persons. In the negotiations on FTA in services that the EU has concluded so far (Mexico, Chile, and Caribbean countries), modes 1 and 3 were the primary objectives of services liberalization negotiations. This is of no surprise as those modes are particularly important for the EU service providers. Because of the EUs bargaining power most of the liberalization in services with MNMCs would take place, whether MNMCs like it or not, in these two modes.

Depending on the type of service, trade barriers may be of different character. For example, if commercial presence abroad is not required, and the sale of services abroad is executed by phone or internet, the most likely obstacles to trade in services are business regulations in a provider's country. Similarly, if the presence of natural persons is required

abroad in order to provide a specific type of service, the most likely barriers may arise from employment regulations in host countries. When commercial presence abroad is needed, then host country regulations regarding the establishment of a business will play an important role.

In the case of cross-border supply, a liberalized market allows firms to reap economies of scale. Given the nature of many services, the marginal cost of serving an additional customer in an extended market is low. For example, if a European financial services firm is allowed to offer financial advising in the MNMCs, then the marginal investment that is needed to supply the services is negligible. If market entry necessitates "commercial presence", that is, FDI, then a service will create “sunk” investments, which often call for considerable sales to be profitable. The bigger the initial investment, the greater the economies of scale. Examples of this kind of industries are telecommunications, transport, or financial services – in all of which the EU has comparative advantage.

Because of massive economies of scale, there are so-called "first-mover advantages". If the EU is the first to conclude a FTA with the MNMC, European firms may enter a MNMC market and acquire communication networks, power plants or distribution networks. In retail markets that require large numbers of branches, first entrants can achieve economies of scale in marketing and back office operations. Competitors that try to establish a presence later find themselves excluded because all attractive domestic companies have been acquired. In this case, it may not matter much if liberalization is legally non-discriminatory, since new barriers to entry have been already created.

For these reasons, if a MNMC liberalizes its investment regime under a FTA, EU multinational companies (MNCs) will generally overcome the advantages of domestic incumbents, since they can offer more attractive products at lower prices. If, however, the incumbent is already a European multinational, the sunk costs may be sufficient to deter later entrants from other developed countries. Consequently, the European incumbent firm will try to set its prices high enough to earn rents, but low enough to deter competitors

from entering. Hence the importance for the EU to rush and be the first to have a services agreement with Mediterranean Arab countries, as concluded above.

In addition to market structures, regulatory frameworks shape the environment in which firms compete after liberalization. In services, standards often influence costs. If MNMCs adopt the *acquis communautaire*, then European firms have an advantage in providing their services that are already in compliance with these requirements. More immediately, MNMCs regulators may restrict the number of service providers by giving out a limited number of licenses, or require non-EU firms to incorporate in their jurisdiction in order to provide services. Such regulatory requirements may again penalize non-EU entrants, who may be excluded from competing in the market altogether.

MNMCs have to deal with two challenges when trying to attract services. First, they need to reassure foreign investors that their property rights will be respected by future governments that may have different policy preferences. Second, they need to distinguish themselves from other potential services hosts that also try to attract investments. This may explain the incentive of MNMCs to sign investment agreements alongside FTA with the EU.

An investment agreement, which relates directly to the service supply of establishment of commercial presence (mode 3), helps solving the problem that foreign investors may be wary about of host countries with a history of political instability. As soon as European firms has "sunk" investments in a MNMC, bargaining power shifts away from the European multinational and to the host country government. In bargains between MNMC regulators and EU MNCs, the European firm will have more leverage prior to investing than afterward. Since important service sectors, such as telecommunications and financial services, are consumed widely, the political temptation to limit profits of European firms in order to please the general population is great. On the other hand, if the government limits the profitability of an investment too much, the European firm may find itself “trapped” in the market and refuse to commit further capital, and the MNMC government may have difficulties finding alternative investors. This is why any future EMP FTA in services must

incorporate some kind of dispute settlement procedures with investor-state provisions. In those type of agreements foreign firms obtain not only most-favored-nation treatment, but usually also national treatment and the right to invest in any industry, except for those specifically excluded by the host government.

The bargain in FTA, thus, has both domestic and international aspects. MNMC governments must try to balance the desires of consumers (low prices and adequate supply), those of European firms (stable and sufficient profits), and the need to attract FDI in general. Unfortunately, constraints on regulatory freedom can have adverse consequences because many service industries tend toward imperfect competition. MNMCs may not only be prevented from expropriating European investors, but also from establishing competitive and contestable markets with lower prices for consumers.

Irrespective of estimated likely gains from free trade in services, even the EU has not yet managed to establish a fully functioning internal service market. There are still large barriers to trade among the EU Members in the form of monopolies restricting the entry of foreign providers (e.g., in postal services and energy utilities), quantitative restrictions, territorial and residency restrictions, professional regulations, and so on.

Barriers in services trade between the old and new EU members are even greater. Therefore, the possibility of significant liberalization of trade in services between the EU and the ENP economies during the coming years are not very realistic, but limited progress in certain services is possible and should be sought . For the majority of the ENP countries, the likely threshold possible to attain within the coming years are the provisions negotiated under the GATS. For MNMCs that are not yet WTO members (e.g. Algeria) even binding future commitments will be an important step forward in liberalizing trade in services.

While the effects of a partial liberalization of trade in services with the ENP countries, with some restrictions especially regarding employment of workers from the ENP, would be positive, they are likely to be marginal for the EU. Given the relative technological and managerial gap of MNMCs vis-à-vis the EU, it is expected that welfare gains from the liberalization of trade in services would be important for MNMCs.

APPENDIX

Appendix A. Construction of variables

A.1 Language dummy

CEPII differenciates two types of language dummies: common official language and common spoken language. We have mixed the two types and constructed a dummy that takes value one if both countries have either a common official or spoken language or both and value zero if they do not share any type of common language.

A.2 Colonial dummy

CEPII recognizes five types of colonial dummies: *Colony*, for countries that have had a colonial link at some point in history, *Comcol*, which refers to countries that have had a common colonizer after 1945; *Curcol*, which refers to countries that are currently in a colonial relationship; *col45*, for countries that have had a colonial relationship after 1945 and *Smctry,* for countries that are or were the same country. The colonial dummy used in our analysis is based on the first type of colonial dummy: *colony*.

A.3 Relative factor endowment variable

Relative factor endowment is defined as the difference between the investment-labour ratio of the origin and destination country. We have measured investment as *gross fixed capital formation*, with data from WB Development Indicators. Labour has been measured as the *working population*, calculated as

*total labour force * (1-% unemployment over labour force)*

The source for labour force and unemployment rate has been the WB Development Indicators.

We have then calculated the ratio as such:

$$ln(K_i/L_i \ / \ K_j/L_j) = ln\ (K_i/L_i) - ln(K_j/L_j)$$

where *K* is capital, *L* is labour, *i* is the origin country and *j* is destination country.

Appendix B. Econometric tables and tests

B.1 Random-effects regression

Independent variables	Label	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(10robust)	(11robust)
GDP origin country	$lgdpo_{it}$	2.725*** (0,000)	2.138*** (0,001)	2.145*** (0,000)	2.141*** (0,000)	2.126*** (0,000)	1.996*** (0,000)	1.980*** (0,000)	1.829*** (0,000)	2.121*** (0,000)	2.076*** (0,000)	2.076*** (0,000)	1.876*** (0,000)
GDP destin country	$lgdpd_{jt}$	1.895*** (0,000)	0.872*** (0,006)	0.930*** (0,003)	0.918*** (0,004)	0.861*** (0,006)	0.802** (0,011)	0.777** (0,014)	1.045*** (0,007)	1.371*** (0,000)	1.525*** (0,000)	1.525*** (0,000)	1.435*** (0,000)
distance	$ldistcap_{ijt}$	-4.353*** (0,000)	-3.251*** (0,000)	-3.237*** (0,000)	-3.241*** (0,000)	-3.198*** (0,000)	-3.250*** (0,000)	-3.061*** (0,000)	-3.055*** (0,000)	-2.979*** (0,000)	-3.159*** (0,000)	-3.159*** (0,000)	-2.846*** (0,000)
lag liberalization of trade in services	$laglits_{ijt}$		0.335 (0,132)	0.271 (0,234)	0.269 (0,238)	0.356 (0,118)	0.500** (0,027)	0.522** (0,022)	0.575** (0,045)	0.427* (0,066)	1.466*** (0,001)	1.466*** (0,001)	1.829*** (0,000)
dummy colony	$dummycolony_{ijt}$			1.828 (0,176)	-0.391 (0,949)								
interaction laglits dummycolony	laglitscol				0.372 (0,710)								
dummy language	$dummylanguage_{ijt}$					-0.518 (0,716)							
relative factor endowments	$laglrkl_{ijt}$						1.193*** (0,000)	1.480*** (0,000)	1.575*** (0,001)	1.736*** (0,000)	1.600*** (0,000)	1.600*** (0,000)	1.126*** (0,009)
average years of schooling host co.	iyr_sch_{ij}							0.201 (0,200)	0.282* (0,096)	0.710*** (0,007)	-0.809*** (0,002)	-0.809*** (0,001)	-0.626** (0,017)
privatization proceeds of destinationcountry	$lprivproceeds_{jt}$								0.166 (0,136)				
whether host country is a democracy or not	$dpolity2_{jt}$									7.795*** (0,000)	13.085*** (0,000)	13.085*** (0,000)	12.051*** (0,000)
interaction laglits polity2	laglitspolity										-1.241*** (0,006)	-1.241*** (0,004)	-1.368*** (0,001)
timedummy	timedummy												yes
dummy region	dregion												
interaction region laglits	laglitsdregion												
	Tests												
	autocorrelation												✕
	heteroskedasticity												✓
	Unit root problem dep var												✕
	num. Obs	3156	1773	1773	1773	1773	1743	1743	1139	1658	1658	1658	1658
	Adj. R^2	0.2466	0.2073	0.2086	0.2078	0.2075	0.2149	0.2200	0.2435	0.2347	0.2463	0.2463	0.2463

Note: The p-values are in parentheses

Appendix B.2. Heteroskedasticity, autocorrelation and unit root tests

Unit root tests: Phillips-Perron tests

With no time trend

```
. xtunitroot fisher lfdi3, pperron lags(0)
(1975 missing values generated)
could not compute test for panel 56
could not compute test for panel 59
could not compute test for panel 62
could not compute test for panel 141
could not compute test for panel 142
could not compute test for panel 145
could not compute test for panel 146
could not compute test for panel 152
could not compute test for panel 155
could not compute test for panel 219
could not compute test for panel 224
could not compute test for panel 226
could not compute test for panel 230
could not compute test for panel 235
could not compute test for panel 236
could not compute test for panel 247
could not compute test for panel 276

Fisher-type unit-root test for lfdi3
Based on Phillips-Perron tests
---------------------------------------------------------------------------
Ho: All panels contain unit roots           Number of panels       =    276
Ha: At least one panel is stationary        Avg. number of periods =  12.02

AR parameter:    Panel-specific             Asymptotics: T -> Infinity
Panel means:     Included
Time trend:      Not included
Newey-West lags: 0 lags
---------------------------------------------------------------------------
                                  Statistic      p-value
---------------------------------------------------------------------------
 Inverse chi-squared(518)  P      1995.8430       0.0000
 Inverse normal            Z       -26.2732       0.0000
 Inverse logit t(1054)     L*      -35.5330       0.0000
 Modified inv. chi-squared Pm       45.9143       0.0000
---------------------------------------------------------------------------
 P statistic requires number of panels to be finite.
 Other statistics are suitable for finite or infinite number of panels.
---------------------------------------------------------------------------
```

With time trend

```
. xtunitroot fisher lfdi3, pperron trend lags(0)
(1975 missing values generated)
could not compute test for panel 56
could not compute test for panel 59
could not compute test for panel 62
could not compute test for panel 141
could not compute test for panel 142
could not compute test for panel 145
could not compute test for panel 146
could not compute test for panel 152
could not compute test for panel 155
could not compute test for panel 219
could not compute test for panel 224
could not compute test for panel 226
could not compute test for panel 230
could not compute test for panel 235
could not compute test for panel 236
could not compute test for panel 247
could not compute test for panel 276

Fisher-type unit-root test for lfdi3
Based on Phillips-Perron tests
---------------------------------------------------------------------------
Ho: All panels contain unit roots           Number of panels       =    276
Ha: At least one panel is stationary        Avg. number of periods =  12.02

AR parameter:    Panel-specific             Asymptotics: T -> Infinity
Panel means:     Included
Time trend:      Included
Newey-West lags: 0 lags
---------------------------------------------------------------------------
                                  Statistic      p-value
---------------------------------------------------------------------------
 Inverse chi-squared(518)  P      1847.1928       0.0000
 Inverse normal            Z       -22.4767       0.0000
 Inverse logit t(1024)     L*      -31.7531       0.0000
 Modified inv. chi-squared Pm       41.2960       0.0000
---------------------------------------------------------------------------
 P statistic requires number of panels to be finite.
 Other statistics are suitable for finite or infinite number of panels.
---------------------------------------------------------------------------
```

Breusch-Pagan test for heteroskedasticity

```
. xttest0

Breusch and Pagan Lagrangian multiplier test for random effects

        lfdi3[pairofcountries_num,t] = Xb + u[pairofcountries_num] + e[pairofcountries_num,t]

        Estimated results:
                     |       Var     sd = sqrt(Var)
             ---------+------------------------------
               lfdi3 |    63.36087       7.959954
                   e |    40.56959       6.369426
                   u |    10.90801       3.302728

        Test:   Var(u) = 0
                             chibar2(01) =    80.81
                          Prob > chibar2 =   0.0000
```

Wooldridge test for autocorrelation in panel data

```
. xtserial lfdi3 lgdpo lgdpd ldistcap laglits laglrkl  iyr_sch dpolity2 laglitspolity

Wooldridge test for autocorrelation in panel data
H0: no first-order autocorrelation
    F(  1,     159) =      0.640
           Prob > F =      0.4248
```

Appendix B.3. Random-effects with the dependent variable taking negative values

Independent variables	Label	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(10robust)	(11robust)
GDP origin country	$lgdpo_{it}$	2.380*** (0,000)	2.395*** (0,000)	2.421*** (0,000)	2.418*** (0,000)	2.361*** (0,000)	1.962*** (0,000)	1.957*** (0,000)	1.472** (0,019)	1.432** (0,024)	1.894*** (0,000)	1.894*** (0,000)	1.654*** (0,000)
GDP destin country	$lgdpd_{jt}$	1.488*** (0,000)	0.843* (0,065)	0.920** (0,047)	0.895* (0,055)	0.815* (0,075)							
distance	$ldistcap_{ijt}$	-4.655*** (0,000)	-3.823*** (0,000)	-3.826*** (0,000)	-3.842*** (0,000)	-3.684*** (0,000)	-3.592*** (0,000)	-3.248*** (0,000)	-3.093*** (0,000)	-2.727*** (0,000)	-3.096*** (0,000)	-3.096*** (0,000)	-2.637*** (0,000)
liberalization of trade in services	$lits_{ijt}$		0.108 (0,758)	0.007 (0,983)	-0.003 (0,993)	0.170 (0,640)	0.579* (0,051)	0.601** (0,043)	0.917** (0,011)	0.974*** (0,009)	2.195*** (0,001)	2.195*** (0,002)	2.645*** (0,000)
dummy colony	$dummycolony_{ijt}$			2.161 (0,253)	-2.386 (0,803)								
interaction laglits dummycolony	laglitscol				0.763 (0,628)								
dummy language	$dummylanguage_{ijt}$					-1.323 (0,513)							
relative factor endowments	$laglrkl_{ijt}$						1.542*** (0,002)	2.153*** (0,000)	2.058*** (0,006)	1.538** (0,048)	2.171*** (0,001)	2.171*** (0,000)	1.447** (0,020)
average years of schooling host co.	iyr_sch_{ij}							0.386* (0,086)	0.424* (0,089)	-0.880* (0,076)	-0.711* (0,054)	-0.711* (0,058)	-0.513 (0,178)
privatization proceeds of destinationcountry	$lprivproceeds_{jt}$								0.318* (0,099)	0.308 (0,111)			
whether host country is a democracy or not	$dpolity2_{jt}$									9.536*** (0,003)	15.589*** (0,000)	15.589*** (0,000)	14.421*** (0,000)
interaction laglits polity2	laglitspolity										-1.736*** (0,010)	-1.736** (0,012)	-1.897*** (0,005)
timedummy	timedummy												yes
	Tests												
	autocorrelation												✗
	heteroskedasticity												✓
	Unit root problem dep var												✗
	num. Obs	3156	1773	1773	1773	1773	1759	1759	1155	1118	1674	1658	1674
	Adj. R^2	0.1103	0.0885	0.0899	0.0893	0.0888	0.0920	0.0966	0.1120	0.1177	0.1119	0.2463	0.1345

Note: The p-values are in parentheses

** Significant at the 10% level*

*** Idem, 5%*

**** Idem., 1%*

Appendix B.4. Heteroskedasticity, autocorrelation and unit root tests

Unit root tests: Phillips-Perron tests

With no time trend

```
. xtunitroot fisher lfdi4, pperron lags(0)
(1975 missing values generated)
could not compute test for panel 56
could not compute test for panel 59
could not compute test for panel 62
could not compute test for panel 141
could not compute test for panel 142
could not compute test for panel 145
could not compute test for panel 146
could not compute test for panel 152
could not compute test for panel 155
could not compute test for panel 219
could not compute test for panel 224
could not compute test for panel 226
could not compute test for panel 230
could not compute test for panel 235
could not compute test for panel 236
could not compute test for panel 247
could not compute test for panel 276

Fisher-type unit-root test for lfdi4
Based on Phillips-Perron tests
------------------------------------
Ho: All panels contain unit roots           Number of panels       =    276
Ha: At least one panel is stationary        Avg. number of periods =  12.02

AR parameter:    Panel-specific             Asymptotics: T -> Infinity
Panel means:     Included
Time trend:      Not included
Newey-West lags: 0 lags
-------------------------------------------------------------------------
                                  Statistic      p-value
-------------------------------------------------------------------------
 Inverse chi-squared(518)  P      2057.9968       0.0000
 Inverse normal            Z       -26.2475       0.0000
 Inverse logit t(1094)     L*      -35.6216       0.0000
 Modified inv. chi-squared Pm       47.8454       0.0000
-------------------------------------------------------------------------
 P statistic requires number of panels to be finite.
 Other statistics are suitable for finite or infinite number of panels.
-------------------------------------------------------------------------
```

With time trend

```
. xtunitroot fisher lfdi4, pperron trend lags(0)
(1975 missing values generated)
could not compute test for panel 56
could not compute test for panel 59
could not compute test for panel 62
could not compute test for panel 141
could not compute test for panel 142
could not compute test for panel 145
could not compute test for panel 146
could not compute test for panel 152
could not compute test for panel 155
could not compute test for panel 219
could not compute test for panel 224
could not compute test for panel 226
could not compute test for panel 230
could not compute test for panel 235
could not compute test for panel 236
could not compute test for panel 247
could not compute test for panel 276

Fisher-type unit-root test for lfdi4
Based on Phillips-Perron tests
------------------------------------
Ho: All panels contain unit roots           Number of panels       =    276
Ha: At least one panel is stationary        Avg. number of periods =  12.02

AR parameter:    Panel-specific             Asymptotics: T -> Infinity
Panel means:     Included
Time trend:      Included
Newey-West lags: 0 lags
-------------------------------------------------------------------------
                                  Statistic      p-value
-------------------------------------------------------------------------
 Inverse chi-squared(518)  P      1811.5390       0.0000
 Inverse normal            Z       -21.6982       0.0000
 Inverse logit t(1049)     L*      -30.3035       0.0000
 Modified inv. chi-squared Pm       40.1883       0.0000
-------------------------------------------------------------------------
 P statistic requires number of panels to be finite.
 Other statistics are suitable for finite or infinite number of panels.
-------------------------------------------------------------------------
```

Breusch-Pagan test for heteroskedasticity

```
Breusch and Pagan Lagrangian multiplier test for random effects

        lfdi4[pairofcountries_num,t] = Xb + u[pairofcountries_num] + e[pairofcountries_num,t]

        Estimated results:
                         |       Var     sd = sqrt(Var)
                ---------+-----------------------------
                    lfdi4|    167.2059       12.93081
                       e|    136.9332       11.70185
                       u|    15.52284       3.939904

        Test:   Var(u) = 0
                                 chibar2(01) =    34.88
                              Prob > chibar2 =   0.0000
```

Wooldridge test for autocorrelation in panel data

```
. xtserial lfdi4 lgdpo ldistcap laglits laglrkl iyr_sch dpolity2 laglitspolity

Wooldridge test for autocorrelation in panel data
H0: no first-order autocorrelation
    F(  1,     159) =      0.391
           Prob > F =      0.5329
```

Appendix B.5. Ranking countries according to average FDI levels

destinationcountry_num	fdi average (ln)
Palestinian territory	0.34
Syria	4.20
Jordan	6.68
Malta	8.07
Latvia	8.21
Algeria	8.61
Estonia	8.97
Morocco	9.75
Lebanon	9.81
Lithuania	10.11
Cyprus	10.56
Tunisia	10.56
Slovenia	10.89
Egypt	11.38
Slovakia	11.62
Israel	11.84
Bulgaria	13.10
Czech Republic	13.66
Romania	14.04
Hungary	14.85
Poland	16.62
average	**10.18**

Appendix B.6 Tobit and Poisson regression

Independent variables	Label	Tobit	Poisson
GDP origin country	**lgdpo$_{it}$**	1.816*** (0,000)	1.248*** (0,000)
GDP destin country	**lgdpd$_{jt}$**	1.392*** (0,000)	1.147*** (0,006)
distance	**ldistcap$_{ijt}$**	-2.779*** (0,000)	-0.718*** (0,000)
lag trade in services	**laglits$_{ijt}$**	1.888*** (0,000)	**1.147***** (0,001)
lag relative factor endowments	**laglrkl$_{ijt}$**	1.187*** (0,003)	1.021 (0,553)
average years of schooling host co.	**iyr_sch$_{ij}$**	-0.607** (0,012)	-0.946 (0,108)
whether host country is a democracy or not	**dpolity2$_{jt}$**	12.115*** (0,000)	2.877*** (0,002)
interaction laglits polity2	**laglitspolity**	-1.388*** (0,001)	-0.881*** (0,001)
timedummy	**timedummy**	yes	yes
	num. Obs	1658	1658
	Log likelihood	-5496,5	0.2685

Note: The p-values are in parentheses

** Significant at the 10% level*

*** Idem, 5%*

**** Idem., 1%*

Appendix B7. Robustness' check when GDP pc is include

GDP per capita origin country = lgdppco → not significant

GDP per capita destination country = lgdppcd → not significant.

```
. xtreg   lfdi3 lgdpo lgdpd  lgdppco lgdppcd ldistcap laglits laglrkl iyr_sch dpolity2 laglitspolity  timedummy, r

Random-effects GLS regression                   Number of obs      =      1658
Group variable: pairofcoun~m                    Number of groups   =       185

R-sq:  within  = 0.0078                         Obs per group: min =         1
       between = 0.5059                                        avg =       9.0
       overall = 0.2550                                        max =        17

Random effects u_i ~ Gaussian                   Wald chi2(11)      =    329.41
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =    0.0000

                  (Std. Err. adjusted for 185 clusters in pairofcountries_num)
------------------------------------------------------------------------------
             |               Robust
       lfdi3 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       lgdpo |   2.140578   .3591084     5.96   0.000     1.436739    2.844418
       lgdpd |   1.697916   .3560157     4.77   0.000     1.000138    2.395694
     lgdppco |   1.136464    1.18816     0.96   0.339    -1.192286    3.465215
     lgdppcd |    1.79769   1.115165     1.61   0.107    -.3879936    3.983373
    ldistcap |  -3.166442   .5021837    -6.31   0.000    -4.150704   -2.18218
     laglits |   1.582357   .4354478     3.63   0.000     .7288946    2.435819
     laglrkl |   2.226328   .9125041     2.44   0.015     .4378532    4.014803
     iyr_sch |  -.6533228     .26512    -2.46   0.014    -1.172948   -.1336972
    dpolity2 |    10.6978   2.815796     3.80   0.000     5.178946    16.21666
laglitspol~y |  -1.396142   .4327462    -3.23   0.001    -2.244309   -.5479747
   timedummy |  -.2519779    .075642    -3.33   0.001    -.4002336   -.1037222
       _cons |  -63.59697   14.11436    -4.51   0.000     -91.2606   -35.93333
-------------+----------------------------------------------------------------
     sigma_u |  3.2956732
     sigma_e |  6.3635894
         rho |  .21149052   (fraction of variance due to u_i)
------------------------------------------------------------------------------

. xtreg   lfdi3 lgdppco lgdppcd ldistcap laglits laglrkl iyr_sch dpolity2 laglitspolity  timedummy, r

Random-effects GLS regression                   Number of obs      =      1658
Group variable: pairofcoun~m                    Number of groups   =       185

R-sq:  within  = 0.0019                         Obs per group: min =         1
       between = 0.4371                                        avg =       9.0
       overall = 0.2266                                        max =        17

Random effects u_i ~ Gaussian                   Wald chi2(9)       =    216.22
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =    0.0000

                  (Std. Err. adjusted for 185 clusters in pairofcountries_num)
------------------------------------------------------------------------------
             |               Robust
       lfdi3 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
     lgdppco |   .7806436   1.264875     0.62   0.537    -1.698465    3.259752
     lgdppcd |   1.400534   1.132929     1.24   0.216     -.819966    3.621033
    ldistcap |  -2.067151   .5252677    -3.94   0.000    -3.096656   -1.037645
     laglits |   2.463917   .4176457     5.90   0.000     1.645347    3.282488
     laglrkl |   2.017759    .968533     2.08   0.037     .1194695    3.916049
     iyr_sch |  -.3717838   .2732208    -1.36   0.174    -.9072867     .163719
    dpolity2 |   8.070332   2.866953     2.81   0.005     2.451208    13.68946
laglitspol~y |  -1.177461   .4506281    -2.61   0.009    -2.060675   -.2942458
   timedummy |  -.2169895   .0782232    -2.77   0.006     -.370304   -.0636749
       _cons |  -35.65983   14.47227    -2.46   0.014    -64.02495   -7.294715
-------------+----------------------------------------------------------------
     sigma_u |  3.5909513
     sigma_e |  6.3640628
         rho |  .24149518   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

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