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# Foreign Direct Investment and Trade: Complements or Substitutes? Empirical Evidence for the European Union

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## ABSTRACT

International Trade and Foreign Direct Investment (FDI) have grown at fast paces during the last decades. At this point, however, it is not clear whether trade and investment are regarded by firms as complementary ways of accessing other markets, or, instead, if they are employed as alternative strategies. This paper examines this issue empirically, for the particular case of Europe, an area in which commercial and economic integration has gained remarkable momentum since 1992. More specifically, it tests whether the reduction of trade barriers over time among the members of the European Union (EU) has increased not only trade flows but also FDI within those countries. A gravity model is estimated using the Hausman-Taylor estimation technique—to circumvent time invariability and endogeneity—for intra Europe FDI and, separately, for FDI to the EU members with origin in third countries. In addition to trade integration measures, this paper also analyzes the potential role of other traditional determinants of FDI, as the market size of the host country and the cost differential among home-host economies. The results suggest that EU commercial integration and FDI reinforce each other, thus being complements rather than substitutes in Europe. This effect is apparent for the intra-EU FDI and also for investment coming from countries outside the EU. Cost differentials are not as relevant as the possibility of gaining market share which leads us to conclude that in the EU the FDI pattern follows a horizontal strategy rather than a FDI vertical model.

**Keywords:** International Trade; FDI; Gravity Model; Hausman-Taylor Estimation; European Union

## 1. Introduction and Background

During the second half of the XXth century and the first decade of the XXIst the world economy has been immersed in an accelerated process of internationalization and globalization. The increasing competition and rivalry in markets have changed the pattern of goods production and distribution, intensifying international linkages and deepening economic inter-dependence among areas. In this scenario, commercial transactions and foreign investments have gained significant momentum. Global trade, which amounted to 27% of world GDP in 1970, was more than 55% in 2010. The evolution of FDI is even more impressive: the ratio FDI/GDP was 6 times higher in 2010 (30.5%) than in 1980 (5.5%).

On a priori grounds, it is not straightforward to state whether FDI and trade have been considered by firms as complementary or alternative ways of serving foreign markets. Empirical evidence in this regard is ambiguous: while a number of studies suggest a relationship of complementarity between trade and FDI at the aggregate level, other studies, usually working at a more disaggregated level, are inconclusive. [1] and [2] report a positive relationship between international trade and FDI; they justify this effect by the fact that FDI and trade share common determinants. [3,4] find a causal relationship from FDI to exports for Mexico and Latin America, respectively. [5,6] suggest a complementarity relationship between trade and FDI in the European Union and Central-Eastern European Countries (CEECs). Neary [7] finds evidence in favour of the export-platform FDI hypothesis, whereby firms locate plants in one nation as a way of covering a larger area. [8] analyses American outward FDI to Latin American countries and find different results for alternative host countries and industries. [9] and [10] report a substitution relationship between exports and FDI for the United States and Japan in the automotive, automotive spare parts and electronic sectors. [11] analyses the service sector; they find a relationship of complementarity at the aggregate level but a substitution effect for transport and construction services.

There are still questions that are relevant for policymakers and remain unsolved by the empirical literature. Commercial integration—as characterized by the reduction of tariff (TBs) and nontariff barriers (NTBs)—has

often been captured in the empirical literature by using dummy variables which represent the existence of Bilateral Trade Agreements (BTAs) or Regional Integration Agreements (RIAs) [2,5,6,12, among others]. The intra-European trade openness rate is proposed to measure commercial integration in order to address the connexion between trade and FDI in the context of a highly integrated area, such as the EU.

The remainder of the paper is organized as follows. Section 2 describes the methodological framework. Section 3 presents the data. Section 4 discusses the estimation results. Finally, Section 5 concludes the paper.

## 2. Methodology

The gravity equation has been widely and successfully used to explain bilateral trade flows. In its simplest form, the gravity equation states that the volume of trade between any two countries is positively correlated with the economic size of these countries and negatively correlated with the geographic distance between them [13]. Although initially the gravity equation lacked theoretical foundation, [14,15] developed a theory to justify the gravity model by using a differentiated product framework and increasing returns to scale. [16] found evidence in favour of the gravity equation from a Dixit-Stiglitz monopolistic competition model. Even the Heckscher-Ohlin international trade model admits easily interpretations that can be applied to the gravity equation [17].

In the last fifteen years, gravity equation has been applied to the empirical analysis of FDI as well [1,5,6,18-20, among others]. In fact, the gravity model has proved to be empirically successful in explaining sales of foreign affiliates of multinational firms and recently it has been provided with a theoretical foundation [21].

Let consider three different econometric specifications for the determinants of FDI, based, respectively, on [19, MM hereafter], [20, BNU hereafter] and [21, KT hereafter]. MM and BNU models represent the new approach to FDI models, that allow for the existence of horizontal and vertical motivations, although, what is more important, these models integrate both horizontal and vertical FDI to come up with a new hybrid model named knowledge-capital. KT paper provides the theoretical underpinnings of the gravity equation applied to the analysis of multinational production determinants. Precisely, they derive the gravity equation form three different models of multinational firms. The first one based on the monopolistic competition model proposed by [1]. The second one close to the monopolistic competition framework of [22], and finally, they also derive the gravity equation from a version of a two-country factor-proportions model of fragmentation based on [23]. A variable to capture commercial integration has been introduced in

these equations in order to test the European trade integration-FDI nexus. The empirical equations to be estimated are as follows:

Based on [19, MM]:

$$\ln \text{FDI}_{ijt} = \alpha + \beta_1 \text{Open}_t + \beta_2 \ln D_{ij} + \beta_3 \ln \left( Y_{it} + Y_{jt} \right)$$
$$+ \beta_4 \ln \left( Y_{it} - Y_{jt} \right)^2 + \beta_5 \ln \text{DifSk}_{ijt} \qquad (1)$$
$$+ \beta_6 \text{TC}_{it} + \beta_7 \text{TC}_{jt} + \beta_8 \text{CPI}_{jt} + \mu_{ijt}$$

Based on [20, BNU]:

$$\ln \text{FDI}_{ijt} = \alpha + \beta_1 \text{Open}_t + \beta_2 \ln D_{ij} + \beta_3 \ln \left( Y_{it} + Y_{jt} \right)$$
$$+ \beta_4 \ln \text{Size}_{ijt} + \beta_5 \ln \left( \text{Size}_{ijt} \right)^2 + \beta_6 \ln \text{Sk}_{ijt} \qquad (2)$$
$$+ \beta_7 \text{TC}_{it} + \beta_8 \text{TC}_{jt} + \beta_9 \text{CPI}_{jt} + \mu_{ijt}$$

Based on [21, KT]:

$$\ln \text{FDI}_{ijt} = \alpha + \beta_1 \text{Open}_t + \beta_2 \ln D_{ij} + \beta_3 \ln Y_{it}$$
$$+ \beta_4 \ln Y_{jt} + \beta_5 \ln \left( Y_{it} + Y_{jt} \right) + \beta_6 \ln \text{RFE}_{ijt} \qquad (3)$$
$$+ \beta_7 \text{TC}_{it} + \beta_8 \text{TC}_{jt} + \beta_9 \text{CPI}_{jt} + \mu_{ijt}$$

where $\text{FDI}_{ijt}$ are the bilateral investment flows from country $i$ to country $j$ in year $t$. $\text{Open}_t$ is a measure of the European commercial integration (the home and host country's European trade openness rate and, separately, its weighted average have been considered for this purpose). $Y_i$ and $Y_j$ are the Gross Domestic Products (GDPs) of the home and host countries, respectively. $D_{ij}$ stands for bilateral distance. $\text{Size}_{ijt}$ captures the economic size of the home country relative to the host country. $\text{Size}_{ijt}^2$ captures the possible non-linearity of $\text{Size}_{ijt}$.

The factor endowment is measured using different definitions in each of the models. In MM $\text{DifSk}_{ijt}$ is defined as the difference in the relative skilled labour endowments between country $i$ and $j$. BNU define $\text{Sk}_{ijt}$ as the share of skilled labour endowment of the home country in total skilled labour endowments of home and host countries, and the unskilled labour endowment of the home country relative, again, to the sum of home and host country unskilled labour endowment. BNU and KT models define the labour shares—$\text{Sk}_{ijt}$ and $\text{RFE}_{ij}$—respectively, as the share of home country skilled labour in total skilled labour of both, home and host, countries and the share of home's unskilled labour.

$\text{TC}_{it}$, $\text{TC}_{jt}$ and $\text{CPI}_{jt}$ are control variables intended to capture the market protection of the home and host countries and the investment costs in the host country. Finally, $\mu_{ijt}$ is the standard classical error term.

## 3. Sample and Data

Two different samples have been used in order to test the hypothesis that intra-European commercial integration

may affect FDI in different ways depending on whether it comes from other European country—*i.e.* foreign investments which have their origin and destination in an EU country—or from a country outside the EU and therefore, not immersed in the European integration process.

The EU sample is conformed using data on bilateral FDI between each of the EU-19[1] countries (Belgium and Luxembourg are considered jointly) over 12 years (1995-2006) leading to 3888 potential observations. The outer-European sample includes Korea, Japan, Norway, Switzerland and the United States as home countries[2] (investors) and the EU-19 as host countries (recipients) over the period 1995-2006 (1080 potential observations)[3].

The dependent variable for the three models presented in the previous section is the bilateral outward FDI stock among countries $i$ and $j$ until date $t$. It is expressed in real terms and 2005 US dollars published by the OECD Statistical Office and UNCTAD. GDPs (in real terms and 2005 US dollars) and bilateral distances come from the OECD's National Account Databases and the *Centre d'Etudes Prospectives et d'Informations Internationals* (CEPII), respectively.

Factor endowment variables are constructed using data on skilled and unskilled labour, obtained from the International Labour Office (ILO) and grouped according to the International Standard Classification of Occupations (ISCO-88). Following [19], the skilled-labour endowment is measured as the sum of workers in categories 1 (legislators, senior officials and managers), 2 (professionals) and 3 (technicians and associate professionals) from ISCO-88.

$TC_{it}$ and $TC_{jt}$ are control variables intended to capture the market protection of the home and host countries. They are computed as the inverse of the trade freedom index from The Heritage Foundation. $CPI_{jt}$ stands for the inverse of the Corruption Perception Index reported by Transparency International. It is used as a proxy of the investment costs in the host country.

Two alternative measures have been used to capture the European commercial integration. The first one is the degree of trade openness of the host countries with the rest of Europe. This variable is calculated, for each country $j$, as the sum of exports from country $j$ to the EU-19 countries plus the sum of imports from the EU-19 countries to country $j$, divided by GDP of country $j$. In other words, we are considering the level of integration of the host country with the rest of Europe (this variable is also constructed for the home country $i$). The second alternative measure is the average degree of intra-European trade openness[4], computed as the weighted average[5] of the European trade openness of the host countries mentioned before[6]. Data on bilateral trade are available from the STAN databases published by the OECD.

## 4. Empirical Results

The trade-FDI nexus is estimated by using the Hausman-Taylor technique (HT). This procedure has, in our opinion, several advantages. First, the HT model provides parameter estimates of time-invariant variables such as distance. The fixed effects model, although consistent, does not supply such estimates. Furthermore, and in contrast to the traditional random effects model, the HT model eliminates the bias in parameter estimates stemming from endogenous unobserved effects. Finally, it is more efficient than the fixed effects estimator. Therefore, HT estimation technique for panel data gives an adequate framework to study the relationship between commercial integration and FDI and circumvent the possible endogeneity of variables and the fact of adding time-in-variable determinants.

This section distinguishes two different scenarios. In the first one, an analysis of the relationship between European commercial integration and intra-European FDI is carried on. In the second, the approach is different; and it only includes FDI from economies that do not belong to the EU assuming that the FDI and the commercial integration relationship could be different and also driven by other factors when focusing on third countries out of the integration zone. **Table 1** presents the outcomes for the intra-European FDI sample while **Table 2** reports the results for the second sample.

In general, regarding the impact of commercial integration on FDI, estimates reveal a positive and highly significant effect, both for the intra-EU and the FDI from third countries, and for total and non-services FDI alike. In other words, results suggest a relationship of complementarity between trade and foreign investment, in line with previous studies [1,2,6,12,18]. The point estimates of the integration effects, as conveyed by **Table 2**, reinforce the export-platform FDI hypothesis [7,25-27]. Put

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[1]EU-19 is formed by the EU-15 countries (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Luxembourg, Portugal, Spain, Sweden and the United Kingdom) plus the 4 frontrunners from Central Europe (Czech Republic, Hungary, Poland and Slovakia).

[2]It would have been interesting to include China (and/or Hong-Kong) but the lack of available data did not make it possible. These five countries account for about 42% of world FDI positions. Countries considered represent the main investors from abroad in the EU; between 15% (Korea) and 55% (Norway) of their investments are established in the EU-19 group.

[3]See **Figure A1** in the Appendix for an evolution of FDI stocks in the EU-19.

[4]An evolution of the average intra-European trade openness rate is presented in **Figure A2** in the Appendix. Until 2002 intra-EU trade openness exhibits a decline due to the slower growth of exports and imports relative to GDP growth. From then, intra-European trade expands at a faster pace and, as a result, trade openness rate increases notably. In 2009 intra-European trade experienced a sharp decline due to the economic crisis.

[5]Relative economic size is used as weight $\left( GDP_i / GDP_{EU-19} \right)$.

[6]See note 1.

**Table 1. Commercial integration and intra-European FDI.**

| | KT (1) | KT (2) | BNU (3) | BNU (4) | MM (5) | MM (6) |
|---|---|---|---|---|---|---|
| EU Average Openness | 2.755*** (1.005) | | 3.366*** (0.971) | | 4.565*** (0.954) | |
| EU Openness$_i$ | | −0.464 (0.693) | | −0.082 (0.683) | | −0.208 (0.693) |
| EU Openness$_j$ | | 2.076*** (0.612) | | 2.158*** (0.622) | | 2.368*** (0.613) |
| D$_{ij}$ | −0.542* (0.291) | −0.447* (0.266) | −0.326* (0.181) | −0.255* (0.144) | −0.494* (0.256) | −0.360* (0.199) |
| Y$_i$ | 0.548*** (0.092) | 0.544*** (0.091) | | | | |
| Y$_j$ | 0.379*** (0.083) | 0.392*** (0.083) | | | | |
| Size$_{ij}$ | | | 0.164** (0.073) | 0.180*** (0.066) | | |
| Size$_{ij}^2$ | | | −0.100** (0.049) | −0.119*** (0.045) | | |
| $(Y_i + Y_j)$ | 0.305** (0.154) | 0.300** (0.142) | 0.688*** (0.051) | 0.682*** (0.047) | 0.517** (0.043) | 0.543*** (0.041) |
| RFE$_{ij}$ | 0.028 (0.448) | −0.002 (0.447) | | | | |
| Sk$_{ij}$ | | | −0.466 (0.442) | −0.463 (0.439) | | |
| DifSk$_{ij}$ | | | | | 0.027 (1.169) | 0.115 (1.169) |
| $(Y_i − Y_j)^2$ | | | | | −0.062** (0.049) | −0.055 (0.048) |
| TC$_i$ | −0.165*** (0.053) | −0.174*** (0.053) | −0.173*** (0.053) | −0.188*** (0.053) | −0.223*** (0.053) | −0.231*** (0.053) |
| TC$_j$ | 0.460 (0.517) | 0.243 (0.525) | 0.371 (0.516) | 0.246 (0.521) | 0.090* (0.051) | 0.688 (0.518) |
| CPI$_j$ | −0.326** (0.160) | −0.356* (0.208) | −0.240** (0.121) | −0.254** (0.115) | −0.249** (0.122) | −0.275** (0.132) |
| # Observations | 2480 | 2470 | 2480 | 2470 | 2480 | 2470 |
| Pseudo-R2 | 0.462 | 0.461 | 0.481 | 0.470 | 0.447 | 0.447 |
| Sargan-Hansen Test for the validity of instruments | 0.317 | 0.366 | 0.361 | 0.410 | 0.302 | 0.379 |

Sources: OECD Statistics; CEPII; ILO; The Heritage Foundation; Transparency International. Notes: ***, ** and * represent significance at the 1%, 5% and 10% level, respectively. Robust standard errors are documented within parenthesis. Dependent variable: Total Bilateral Outward FDI Stocks (in real terms and 2005 US dollars). The dependent variable, $Y_i$, $Y_j$, $Y_i+Y_j$, $(Y_i − Y_j)^2$, Size$_{ij}$, Size$_{ij}^2$, Sk$_{ij}$, DifSk$_{ij}$, RFE$_{ij}$ and D$_{ij}$ are expressed in natural logarithms. The Hausman statistic rejects the null hypothesis of no correlation between unobserved individual effects and explanatory variables in all cases. The outcomes from the Sargan-Hansen over-identification test are *p*-values. Fixed effects for source and destination countries are included [24].

differently, commercial integration of an area increasesits appeal for foreign firms intending to serve the area.

Focused on the intra-European sample, **Table 1** shows a positive correlation between commercial integration and FDI. The more commercially integrated is the European Union, measured by the average openness rate, the more appealing is to invest in Europe for other members of the Union. However, when the openness rate of home and host countries are taken into account results differ. The European openness rate of the home country, although not significant, exhibits a negative sign. On the other hand, European openness rate of the host country is consistently positive and highly significant. This is; the more commercially integrated are the recipient countries, the more FDI flows to them.

Distance represents an obstacle not only to trade but

**Table 2. European commercial integration and FDI from abroad.**

|  | KT (1) | KT (2) | BNU (3) | BNU (4) | MM (5) | MM (6) |
|---|---|---|---|---|---|---|
| EU Average Openness | 1.285*** (0.496) |  | 1.600*** (0.506) |  | 1.815*** (0.495) |  |
| EU Openness$_i$ |  | −0.081 (0.352) |  | −0.138 (0.354) |  | −0.243 (0.342) |
| EU Openness$_j$ |  | 1.123*** (0.297) |  | 1.152*** (0.301) |  | 1.181*** (0.300) |
| D$_{ij}$ | −2.609*** (0.250) | −2.573*** (0.262) | −2.785*** (0.497) | −2.709*** (0.576) | −2.176*** (0.237) | −2.211*** (0.253) |
| Y$_i$ | 2.422*** (0.456) | 2.408*** (0.454) |  |  |  |  |
| Y$_j$ | 1.505*** (0.260) | 1.644*** (0.259) |  |  |  |  |
| Size$_{ij}$ |  |  | 0.652* (0.376) | 0.389 (0.421) |  |  |
| Size$_{ij}^2$ |  |  | −0.380 (0.233) | −0.248 (0.259) |  |  |
| $\left(Y_i + Y_j\right)$ | 1.010* (0.586) | 1.010* (0.589) | 2.705*** (0.223) | 2.882*** (0.213) | 2.531*** (0.173) | 2.692*** (0.166) |
| RFE$_{ij}$ | −0.047 (0.467) | 0.075 (0.466) |  |  |  |  |
| Sk$_{ij}$ |  |  | −0.219 (0.311) | −0.136 (0.317) |  |  |
| DifSk$_{ij}$ |  |  |  |  | 0.158 (0.722) | 0.333 (0.708) |
| $\left(Y_i - Y_j\right)^2$ |  |  |  |  | −0.075** (0.030) | −0.083*** (0.029) |
| TC$_i$ | 0.123*** (0.032) | 0.126*** (0.034) | 0.123*** (0.033) | 0.122*** (0.034) | 0.108*** (0.033) | 0.105*** (0.034) |
| TC$_j$ | −0.851*** (0.260) | −0.628** (0.261) | −0.886*** (0.260) | −0.687*** (0.261) | −1.004*** (0.260) | −0.814*** (0.260) |
| CPI$_j$ | −2.323** (0.950) | −1.736* (0.944) | −2.385** (0.953) | −1.840* (0.946) | −2.675*** (0.959) | −2.108** (0.954) |
| # Observations | 831 | 829 | 831 | 829 | 831 | 829 |
| Pseudo-R2 | 0.415 | 0.420 | 0.474 | 0.477 | 0.426 | 0.484 |
| Sargan-Hansen Test for the validity of instruments | 0.331 | 0.314 | 0.375 | 0.427 | 0.342 | 0.391 |

Sources: OECD Statistics; CEPII; ILO; The Heritage Foundation; Transparency International. Notes: ***, ** and * represent significance at the 1%, 5% and 10% level, respectively. Robust standard errors are documented within parenthesis. Dependent variable: Total Bilateral Outward FDI Stocks (in real terms and 2005 US dollars). The dependent variable, $Y_i$, $Y_j$, $Y_i + Y_j$, $\left(Y_i - Y_j\right)^2$, Size$_{ij}$, Size$_{ij}^2$, Sk$_{ij}$, DifSk$_{ij}$, RFE$_{ij}$ and D$_{ij}$ are expressed in natural logarithms. The Hausman statistic rejects the null hypothesis of no correlation between unobserved individual effects and explanatory variables in all cases. The outcomes from the Sargan-Hansen over-identification test are *p*-values. Fixed effects for source and destination countries are included [24].

also to foreign direct investment. Although point estimates are negative in both tables and for all the models considered, they are only marginally significant (at the 10 percent significance level, except in columns 9 and 12 in **Table 1**).

Economic sizes of the home and host countries, as captured by GDP, have a positive effect on bilateral FDI. This result is well documented by the economic literature [28-32, among others]. As reported by these contributions, one of the main drivers of horizontal FDI is the search of large markets, in which scale economies may be present. In this regard, a bigger host market, a larger global market (as proxied by the sum of the home and host GDPs) and similar characteristics of host and home markets (as captures by the negative sign of Size$_{ij}^2$ and $\left(Y_i - Y_j\right)^2$ variables) are supposed to be positively cor-

related with FDI.

Variables measuring factor endowments capture potential vertical motivations of FDI. According to the economic literature, vertical firms separate the different stages of the production process over countries depending on factor intensities, placing phases intensive on skilled-labour in places where this input is relatively abundant. Results in this respect, however, suggest two different situations. For the intra-European FDI variables capturing relative factor endowments (RFE$_{ij}$, Sk$_{ij}$ and DifSk$_{ij}$, respectively) are not statistically significant, and they are even negative in some instances (**Table 1**; columns 2, 3 and 4).

Finally, the cost of investing in a particular country, proxied by the Corruption Perception Index of the host country, has a negative and statistically significant influence on bilateral FDI, in all the models presented in **Table 1**. Meanwhile, control variables relative to market protection show different signs and significance. Market protection in the home country has a negative influence in intra-European bilateral FDI, consistent with the fact that some of this FDI may return back to the home country via imports. Host country market protection shows a positive sign although not significant [19].

When it comes to analyse the FDI coming from outside the EU, the picture is very similar to that representing intra-European investments. As well as in **Table 1**, **Table 2** exhibits a positive relationship between commercial integration and FDI. This is, a more commercially integrated EU is associated with larger investments from external countries; and again, once the openness rate of home and host countries are considered separately, different trails appear. European openness rate of the host country is constantly positive and significant at the 1% level in all estimations. According to the point estimates relative to the European trade openness rate of the investor country, they exhibit negative signs but they are not significant, as well as for the internal FDI sample.

Distance is an impediment for FDI. Countries far away from Europe tend to invest less in the EU-19. In this case, figures are larger and more statistically significant than those in the intra-European FDI instance.

Horizontal motivations, captured by the economic size of the investment partners, are clearly presented in the data. GDPs of home and host countries exhibit positive figures and are significant at the 1% level at the same time as the global market size (in columns 1 and 2 of **Table 2** it is only marginally significant—10%). In the BNU models, however, this relation is not as obvious, Size$_{ij}$ is only significant in column 3, while its quadratic term appears not significantly different from zero.

As regard to the potential vertical motivations behind the FDI process, measured by the relative factor endowment variables, empirical evidence does not support their presence for the sample considered. Figures do not show consistency or statistically significance.

Point estimates relative to the trade freedom control variables present the opposite signs to the ones shown in **Table 1**. In the case of the FDI from outside the EU, more protection in the home country is related to more outward investments while less protection in the recipient country attracts more FDI. This result is well documented in the economic literature [29,33-35]. Finally, the cost of investing in a particular country has a negative and statistically significant influence on bilateral FDI.

# 5. Conclusions

The empirical analysis discussed here states that commercial integration and FDI to the European Union during 1995-2006 exhibit a positive correlation, thus displaying a relationship of complementarity.

The results also point out that cost differentials, for the country sample considered, are not as relevant as the possibility of gaining market share, which in turn implies that incoming FDI to the EU follows a horizontal strategy rather than a vertical model. Further research from here should cover two main issues. First, alternative variables to relative factor endowments could be used to capture cost differentials. Second, the role of cost differentials on foreign investments in manufacturing should be analyzed in more detail, since the important share of FDI in services on total FDI may be driving the main results relative to the FDI horizontal pattern suggested from the analysis.

Our findings support the idea that policies targeted to promote further consolidations of the European Single Market—removing informal trade barriers, promoting liberalization and reducing bureaucracy, may have positive effects, not only regarding the commercial performance of the EU but also helping to attract FDI to the area, and indirectly, stimulating economic growth.

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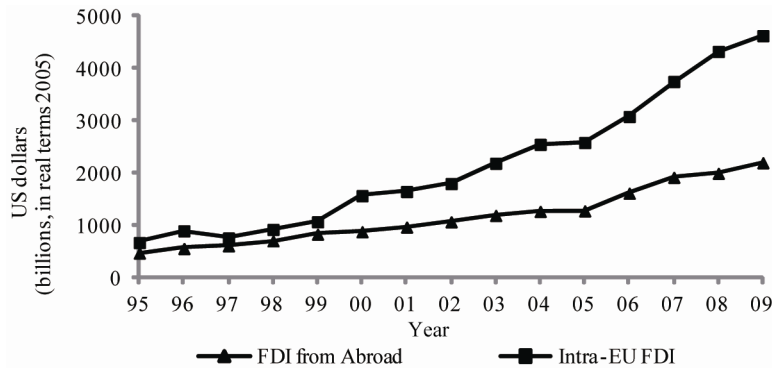
## Appendix



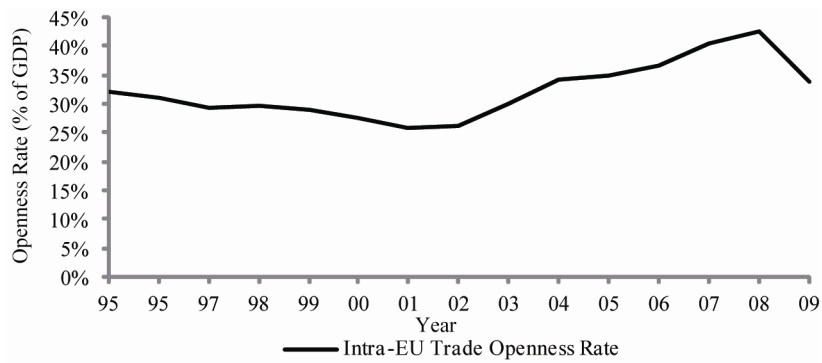**Figure A1. Outward FDI stocks to the European Union.**



**Figure A2. Intra-European trade openness rate (weighted average for the EU-19).**

*TI*