



---

UNIVERSIDADE DE ÉVORA

DEPARTAMENTO DE ECONOMIA

---



DOCUMENTO DE TRABALHO N.º 2003/04

February

---

## **The CEECs as FDI attractors: are they a menace to the EU periphery?**

---

**Aurora Galego**

*Universidade de Évora, Departamento de Economia*

**Carlos Vieira**

*Universidade de Évora, Departamento de Economia*

**Isabel Vieira**

*Universidade de Évora, Departamento de Economia*

---

UNIVERSIDADE DE ÉVORA  
DEPARTAMENTO DE ECONOMIA  
Largo dos Colegiais, 2 – 7000-803 Évora – Portugal  
Tel.: +351 266 740 894 Fax: +351 266 742 494  
[www.decon.uevora.pt](http://www.decon.uevora.pt) [wp.economia@uevora.pt](mailto:wp.economia@uevora.pt)

**Abstract:**

The change of economic, social and political orientation in Central and Eastern European countries (CEEC), together with their expressed intention of joining the European Union (EU) in a foreseeable future, have raised a number of challenging questions. One object of interest has been the implications of Eastern openness in terms of international capital reallocation. This paper concentrates on the issue of foreign direct investment (FDI), which is considered a major channel of economic integration. In fact, in the particular case of these countries, a dramatic change in the pattern of FDI inflows took place in recent years. A number of studies have surveyed the determinants of FDI to this region but the issue still remains relatively unexplored from the empirical point of view. Using a random effects panel data model in the analysis, we try to empirically uncover the main determinants of FDI and to examine the probability of FDI diversion from the EU periphery to these transition economies. This issue is especially interesting for the EU periphery in general, and for cheap labour suppliers such as Portugal in particular, since there are reasons to believe that 'the east may be getting what would otherwise come south'.

**Keywords:****JEL Classification:**

## **1 - Introduction**

The beginning of the transition process in the CEEC witnessed a remarkable increase in FDI flows to the region. Although not equally benefiting all countries, such growth in external investment has been an important source of financing for economic restructuring and development. In addition, FDI is usually considered the fastest way of transferring market-orientated business culture to the previously centrally controlled economies. The latter is especially important, given the plans of EU membership shared by all these countries.

A number of studies have focused, both theoretically and empirically, on the motives that lead entrepreneurs to engage in international application of funds, and on the motives that make some locations more attractive for certain types of projects than others. At the EU level, reduction of overall risk is probably one critical aspect, since every enlargement has generated an increase of FDI flows to the new members. In the case of the CEEC however, the transition to a market economy and the projects of future participation in the EU have, in most cases, *a priori* triggered the process.

In this analysis, robust econometric techniques are employed to model FDI flows, to identify their main determinants, and to try to anticipate future trends of foreign investments in the CEEC and in the so-called cohesion countries. The latter is done with the objective of ascertaining diversion of direct investment funds from peripheral EU countries to the CEEC.

The paper is organised as follows: section 1 describes the evolution of FDI to the CEEC from 1990 to 2000; in section 2 the empirical literature on the determinants of FDI to transition economies is briefly reviewed; section 3 contains the empirical estimation of a gravity-type model and the interpretation of the obtained results; section 4 concludes.

## **2 - FDI in the CEEC: Characteristics and Trends**

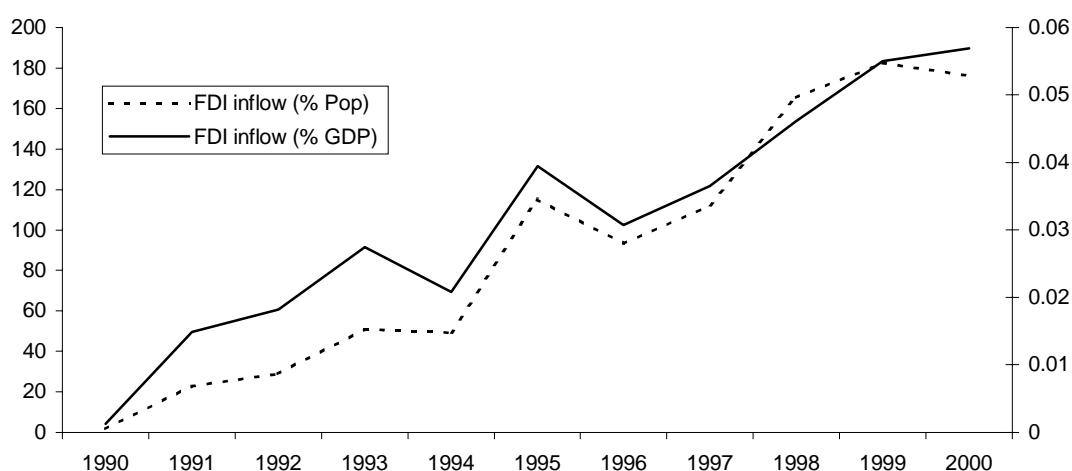
Since the political changes in the beginning of the nineties, when the CEEC' governments became particularly eager to attract foreign direct investment, there has been a continuous increase of FDI to the region. Figure 1 displays this trend of global FDI inflows to the CEEC, both as a ratio of GDP and of population.

**Sumário:**

The change of economic, social and political orientation in Central and Eastern European countries (CEEC), together with their expressed intention of joining the European Union (EU) in a foreseeable future, have raised a number of challenging questions. One object of interest has been the implications of Eastern openness in terms of international capital reallocation. This paper concentrates on the issue of foreign direct investment (FDI), which is considered a major channel of economic integration. In fact, in the particular case of these countries, a dramatic change in the pattern of FDI inflows took place in recent years. A number of studies have surveyed the determinants of FDI to this region but the issue still remains relatively unexplored from the empirical point of view. Using a random effects panel data model in the analysis, we try to empirically uncover the main determinants of FDI and to examine the probability of FDI diversion from the EU periphery to these transition economies. This issue is especially interesting for the EU periphery in general, and for cheap labour suppliers such as Portugal in particular, since there are reasons to believe that 'the east may be getting what would otherwise come south'.

**Palavras-chave:****Classificação JEL:**

**Figure 1: Global FDI inflows in the CEEC, 1990/2000 (% GDP and population)**



Source: Own calculations based on International Financial Statistics, IMF.

There is an evident structural break in the trend in 1995, when FDI inflows almost doubled. In spite of a slight drop in the following year, the value doubled again in the second half of the nineties, reaching around 20 bn. USD in 1999, almost 6% of the region's total GDP. In terms of economic sectors, and according to Eurostat data, FDI in the CEEC is primarily directed at manufacturing activities, followed by "trade and repairs" and financial intermediation.

This global growth trend is clearly dominated in absolute terms by the group of Vizegrad countries (Poland, the Czech Republic and Hungary), which accounted for 81.5% of total FDI inflows to the region in 1999 (Table 1). Poland, by far the most important recipient since 1996, is also the most consistent, maintaining an almost constant continuous growth rate during the whole decade.

Within this group, Hungary has registered a negative trend in absolute terms, since its peak value in 1995 (when it was the main recipient in the group), being surpassed by Poland in 1996 and the Czech Republic in 1998, but remaining however the third biggest FDI attractor. This negative trend possibly reflects the privatisation schedule, almost completed in 1999.

Table 1: FDI in the CEEC

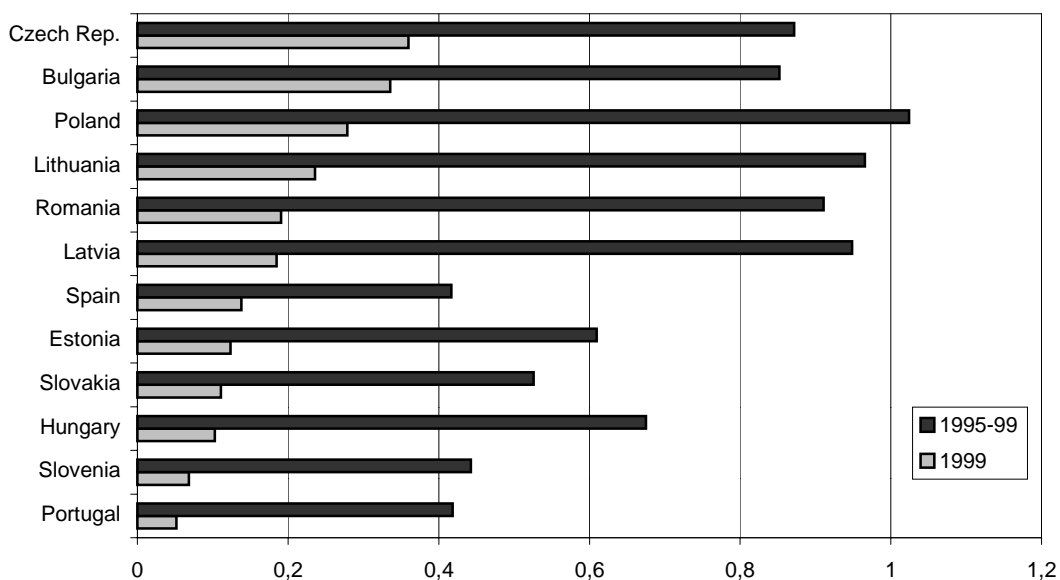
	global inflows (%GDP)						EU outflows (%GDP)			stock (% pop)
	1990-94	<i>Share</i>	1995-99	<i>Share</i>	1999	<i>Share</i>	1990-94	1995-99	1999	1999
Bulgaria	0.5	<i>1.6</i>	4.1	<i>2.9</i>	6.9	<i>4.2</i>	0.2	0.9	0.8	292.7
Czech R.	2.0	<i>10.2</i>	5.6	<i>21.8</i>	12.0	<i>33.1</i>	1.6	2.6	4.7	1707.4
Estonia	9.2	<i>3.1</i>	6.7	<i>2.1</i>	6.4	<i>1.6</i>	0.0	0.0	0.0	1749.9
Hungary	4.5	<i>42.8</i>	6.0	<i>18.5</i>	4.4	<i>10.4</i>	2.0	2.8	0.7	1908.3
Latvia	3.9	<i>1.9</i>	6.4	<i>2.5</i>	5.2	<i>1.8</i>	0.0	0.0	0.0	775.7
Lithuania	0.9	<i>0.4</i>	4.4	<i>2.8</i>	4.6	<i>2.5</i>	0.0	0.0	0.0	563.7
Poland	1.3	<i>30.9</i>	3.8	<i>38.1</i>	4.9	<i>38.1</i>	0.3	1.7	3.1	674.6
Romania	0.8	<i>3.7</i>	3.3	<i>7.1</i>	3.5	<i>5.5</i>	0.1	0.8	1.5	242.9
Slovakia	1.8	<i>3.1</i>	1.7	<i>2.4</i>	1.8	<i>1.9</i>	0.5	1.0	1.0	590.4
Slovenia	0.9	<i>2.3</i>	1.3	<i>1.7</i>	1.0	<i>0.9</i>	0.4	0.7	1.1	1335.0
Portugal	2.4	-	1.7	-	1.1	-	-	-	-	2855.9
Spain	2.3	-	1.7	-	2.7	-	-	-	-	2175.8

Source: International Financial Statistics, IMF, for CEEC inflows and stocks, and Eurostat for EU outflows (does not include reinvested earnings, for comparability reasons). Last column in millions USD.

Examining the ratio between the stock of inward FDI and population in 1999 (last column on the right hand side of table 1), it is clear that the CEEC have not yet reached the levels of the EU countries (with an average value of around 4600 USD), suggesting the continuation of a growth trend of FDI inflows above the average of the EU (Bulgaria and Romania present particularly low levels). Hungary is probably an exception, having reached values close to those of Portugal and Spain (two of the lowest in the EU), for example, which partly explains the above-mentioned recent drop in FDI to this country.

By combining flow and stock data, figure 2 illustrates the dynamics of FDI flows to the CEEC. It presents the ratio of FDI flows in the period 1995-99 and in 1999 to the stock of FDI in 1999. High values of this ratio indicate that a high proportion of the FDI stock was established during the period or year considered. This was the case in the Czech Republic, Bulgaria and Poland, where the ratio exceeded 25% for 1999 and 80% for the second half of the nineties. On the other extreme, low ratios indicate that FDI stocks have been mostly build up in previous years, with a relative decline in the most recent years. Examples are Slovenia, Slovakia and, most notably, Hungary. As a comparison, Spain and Portugal present lower ratios for the period 1995-99.

Figure 2: Ratio of FDI flows to stocks, 1995-99 and 1999



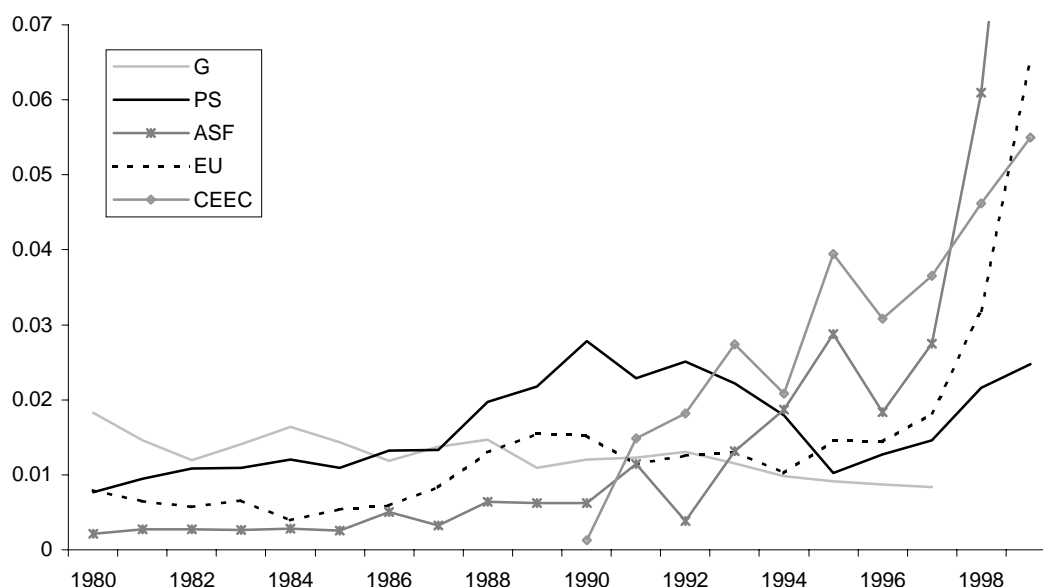
Note: The value above unity reminds that FDI stocks do not equal accumulated flows due to price and exchange rate changes and other adjustments such as changes between portfolio and direct investment (when capital participation rises above 10%).

Source: Own calculations based on International Financial Statistics, IMF.

In relative terms, however, the most prominent host countries of FDI are the Czech Republic, Estonia, Hungary and Latvia. The weight of FDI in these economies

represent on average more than 5%, well above all the others. These values for the CEEC are generally also higher in the same period, with the exception of Bulgaria, Romania and Slovenia, than those for the two Iberian countries, Portugal and Spain.

Figure 3: FDI inflows in the EU across four enlargement periods, 1980-2000 (% GDP)



Source: Own calculations based on International Financial Statistics, IMF. To facilitate comparisons, the value for 1999 in the group of Austria, Sweden and Finland (12.2%) is out of sight.

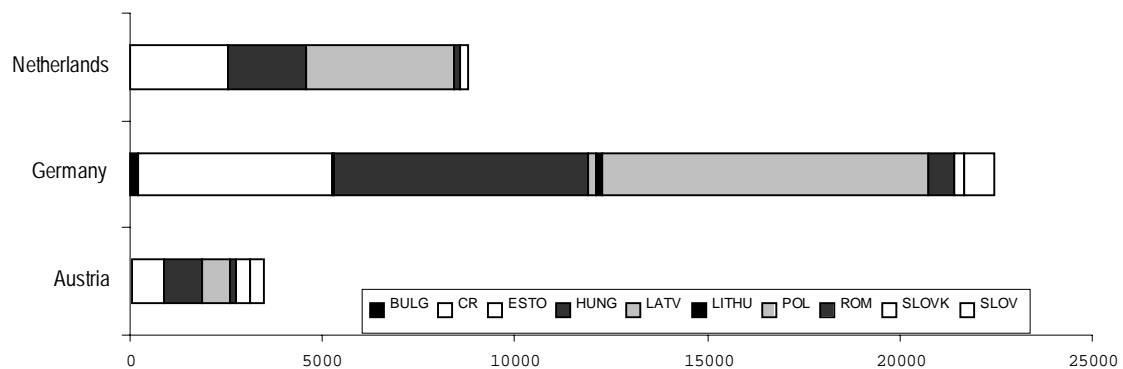
It is also interesting to compare the values for the CEEC in this pre-adhesion period with those registered in Portugal and Spain (PS) when they entered the EEC in 1986. Some similarities may be found in the economic and social conditions of these two groups of countries, in at least two aspects: they both emerge from dictatorships which have blocked international transactions with the rest of Europe; both initiated in these periods a process of privatisations, a traditionally strong factor to attract FDI. As may be observed in figure 3, FDI inflows in Portugal and Spain have risen considerably in the second half of the eighties, after adhesion, falling afterwards, presumably as the privatisation process slowed down.

A similar phenomenon can be observed for the two other enlargements since 1980. Although in a period of considerably higher barriers to capital flows, Greece's (G) FDI inflows rose in the beginning of the eighties (Greece entered the Union in 1981), presenting twice the values of the EU's average. The same happened with the last enlargement in 1995. When Austria, Sweden and Finland (ASF) got membership they became more attractive to foreign investors and are still, nowadays, the main destiny for FDI in the Union.



A very large share of CEEC inward FDI flows originates in EU members, especially Germany, the Netherlands and Austria. Figure 4 highlights these three countries' contribution to each CEEC during the nineties. German investors were the main provider of FDI, preferring the neighbours Poland, the Czech Republic and also Hungary.

Figure 4: FDI inflows from the three main investors (millions USD)

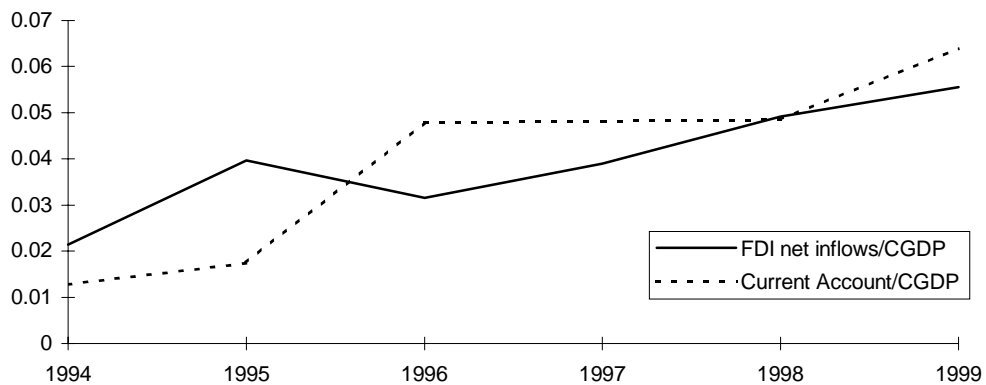


Source: Own calculations based on EUROSTAT database.

In global terms, more than half the FDI flows circulating in the world involve the EU, with the Union's outward flows to the CEEC still representing a very small proportion. Overall, EU's FDI flows to South American, or even Central American, countries are significantly larger and more rapidly increasing than to the CEEC. The recent attractiveness of these three blocks of countries probably resides on similar determinants: economic liberalisation and privatisations. However, EU's flows to the CEEC have dropped in relative terms, from 19% of total EU's FDI (excluding intra-EU and the USA) in 1995 to 13% in 1999 (Passerini, 2001). Poland, the Czech Republic and Hungary have, again and by a large margin (89%), been the most privileged destiny of EU capital during the nineties, although the latter seems to be losing some appeal.

FDI has been very important in financing these countries' current account deficits. Figure 5 compares net capital inflows with the current account balance of the group of ten CEEC between 1994 and 1999. Only in Estonia, Lithuania, Romania and Slovakia were net FDI inflows not sufficient to entirely cover the current account deficit, on average, in this period. This shows the importance of FDI relatively to other components of the Balance of Payments financial account, such as portfolio investment, suggesting feeble financial markets.

**Figure 5: Net capital inflows and the current account in the CEEC, 1994-99 (%GDP)**



Source: Own calculations based on International Financial Statistics, IMF.

### **3 - FDI Determinants: the Empirical Literature**

As referred by Lankes and Venables (1996), FDI projects in the CEEC are very heterogeneous, differing in terms of magnitude, objectives, technology, geographical location, ownership, and control structures. This distinctive character reflects a variety of motivations on the part of the suppliers of direct investment funds.

A number of reasons may influence an entrepreneur's decision to invest abroad, but they all share the common feature of being in harmony with the optimum management strategies of multinational corporations. FDI may be broadly classified into two categories: market-seeking FDI, or FDI that aims at exploiting the advantages of being close to the consumer market, and efficiency-seeking FDI, which is implemented with the objective of exploiting cost advantages in different locations.

In addition to theoretical analyses, researchers have put considerable effort on the empirical identification of FDI determinants. In what concerns FDI directed to the CEEC, the two main approaches have been survey-type studies and formal quantitative analyses. Examples of the former may be found in Lankes and Venables (1996). Quantitative studies of the determinants of FDI are based on a number of different models, being the gravitational approach the most commonly adopted. Gravity models were firstly used in the 60s, in the analysis of international trade, but were subsequently also employed to model and explain FDI flows. In recent years, the issue of FDI to transition economies has been investigated mostly by means of econometric estimation of gravity type models.

A simple and straightforward version of the gravity approach is adopted in Brenton and Di Mauro (1999) to analyse FDI flows to the CEEC and to evaluate the possibility of a

future surge in such flows. In their model the dependent variable - a bilateral FDI flow - is explained in terms of GDP and population of the host country, and of the distance between host and home countries. The data sample extends from 1992 to 1995 and comprises Germany, France, the UK and the USA, as investing countries, and a panel of around 35 host destination countries that includes the transition economies. The results show that FDI is positively affected by GDP, but market size, as proxied by population, does not appear to significantly affect FDI flows. The coefficient on distance is significant and negative. *A priori*, distance may be expected to affect FDI both positively and negatively. In fact, FDI may substitute exports in distant markets, leading to a positive link between the two variables. A negative connection may also emerge since the costs of operating affiliates in foreign locations increase with distance. The latter appears to be the dominant explanation in this study, in all countries except the UK.

The same model applied to a larger data sample, including more destination and investing countries and a wider temporal horizon (1982 to 1995), is used by Brenton, Di Mauro and Lücke (1999). The outcomes of the model, however, are qualitatively identical to those of the previous analysis. Other results suggest that trade and FDI are complements, and that FDI flows to the CEEC appear not to have been diverted from other European locations.

This last result of non-diversion of FDI flows is confirmed by Buch, Kokta and Piazzolo (2001) for the cases of Portugal and Spain, but not for Greece. Their empirical assessment is based on a gravity model that includes the above-mentioned three explanatory variables plus the ratio of the host country's imports (or trade) to GDP, as a proxy of openness to foreign trade, and the ratio of M2 to GDP, as a proxy of the size of host countries' financial systems. The model is estimated using data from 1990 to 1997 and suggests that the decline which may be observed in FDI flows to Southern European countries reflects an adjustment process towards a long-run equilibrium. The empirical assessment of FDI determinants, which is performed with data on eight source countries (six core EU countries plus Japan and the US), provides mixed results. GDP coefficients are mainly significant and positive, and distance coefficients are practically always negative and significant. As in previous studies, population appears not to explain FDI. In what concerns the variables included to proxy trade openness and financial system's size, the results are robust only for the former, which appears to positively influence FDI, as *a priori* anticipated by the researchers.

An important contribution is added to the empirical analysis of the determinants of FDI to the CEEC in Bevan and Estrin (2000), who explicitly take host countries' risk into

account. Risk is associated to credit rating, which in turn is explained by macroeconomic, transition and *environmental* factors. Their analysis is also based on a gravity-type model, and the data sample contains FDI flows from 18 market economies to 11 transition countries, from 1994 to 1998. The results show that FDI is determined by host country risk and size, labour costs and distance. Contrary to what is sometimes argued, on the basis of the Iberian integration experience, this research finds evidence that announcements concerning the future admission of CEEC to the EU tend to influence FDI positively and directly, and not via credit rating. According to these results, such announcements do not affect the rating of these countries directly. It is the subsequent increase in FDI that improves economic performance and, ultimately, improves credit rating.

Due to problems related with data availability and reliability, most empirical studies on FDI are performed using aggregate data. However, the heterogeneous character of FDI projects makes it interesting to investigate whether FDI in different sectors is triggered by different motivations. Two attempts to clarify this matter may be found in Resmini (2000), and in Altomonte (2000), who base their analyses in a common data set of European firms' foreign investments in the CEEC, which takes into account the specific characteristics of each project. Resmini's results suggest that market and strategic issues prevail on vertical (or export orientated) investments. Progress in transition is also found to be an important determinant for capital-intensive sectors, whereas wage differentials tend to attract traditional and science based sectors. Altomonte concludes that FDI appears to be influenced by GDP *per capita* and by population, but not by distance, whereas in previous analyses it is the coefficient on population that usually is non-significant. Wage differences are also found to be positively related to FDI, but a variety of other factors that the author takes into account appear not to be significant.

The scarcity of data relative to FDI in the CEEC creates important constraints to the development of econometric analyses. One strategy to minor this problem is to use panel data techniques in the estimation process. Examples of studies that followed this approach may be found in Lansbury, Pain and Smidkova (1996), and in Holland and Pain (1998). The former try to identify the determinants of FDI from 14 OECD countries to the Czech Republic and Slovakia, Hungary and Poland, from 1991 to 1993, focusing on the privatisation process and on the trade linkages between host and investor countries. The set of explanatory variables includes country risk, the cost of labour, expenses in energy consumption and the relative stock of patents in the host country.

The results suggest that FDI patterns are positively affected by the privatisation schedule, the research base (as proxied by the number of patents) and trade links.

Holland and Pain (1998) focus on the importance of variables such as the privatisation process, overall risk and relative labour costs. They examine the period from 1992 to 1996, considering as host economies the ten CEEC with EU accession agreements plus Croatia. After a variety of econometric analyses designed to explore alternative model specifications, the authors conclude that the privatisation method is an important determinant of FDI, after controlling for market size, and that governments may strengthen this link by improving the prospects for macroeconomic stability. The estimated coefficients on labour costs are statistically significant, therefore highlighting the importance of efficiency-seeking investment projects in the region.

In what follows, we try to extend the existing empirical literature on the subject of FDI determinants by employing a more updated sample of data, by adopting a more robust econometric technique, and by including some variables not previously taken into account.

#### 4 - Empirical Analysis

In order to study the determinants of bilateral FDI flows, a gravity type model is estimated using a panel data approach for the period 1993-1999. Unlike most previous empirical studies, bilateral common effects are considered in the model, to take into account all unobservable country-pair specific effects that are time-invariant and may affect FDI flows between two countries (geographical, historical, political, cultural and other effects). Recent research on the issue of econometric specification of gravity models reach the conclusion that the inclusion of bilateral effects is more general and may produce better estimates than the traditional specifications (see for example Egger and Pfaffermayer (2000)). Moreover, it is stressed that this approach also gives better in sample predictions.

The following model is the basis for the empirical analysis:

$$\ln(FDI_{ijt}) = \alpha_{ij} + \gamma_t + \beta_1 \ln(GDPcap_{it}) + \beta_2 \ln(GDPcap_{jt}) + \beta_3 \ln(pop_{it}) + \beta_4 \ln(pop_{jt}) + \beta_5 \ln(open_{jt}) + \beta_6 \ln(CL_{ijt}) + \beta_7 \ln(dist_j) + \beta_8 Frontier + \varepsilon_{ijt}$$

where *GDPcap* stands for GDP *per capita* in the origin country (i) and host country (j), *pop* is the population of origin country (i) and host country (j), *open* is the degree of openness of the host country, proxied by the ratio of trade to GDP, *CL* are

compensation levels of host country in relation to compensation levels of the origin country,<sup>1</sup> *dist* is the geographical distance between the two countries and *Frontier* is a dummy variable taking the value of one when the countries share a common border. The specification also includes time dummies ( $\gamma_t$ ) to take into account business cycle effects.<sup>2</sup>

The common bilateral effects ( $\alpha_{ij}$ ) can be treated as being random or fixed, depending on the data sample. If the common specific effects are correlated with the explanatory variables, a fixed-effects model should be adopted. The Hausman test can be used to test for such correlation. In our case, the test did not reject the null hypothesis of no correlation between the common specific effects and the regressors. Therefore, a random-effects model is adopted and the Generalised Least Squares methodology is employed to obtain consistent and efficient estimates. The results are displayed in table 2.

---

<sup>1</sup> Compensation levels comprehend total hourly compensation for manufacturing workers, including wage and supplementary benefits (World Competitiveness Yearbook, 1999)

<sup>2</sup> See the Appendix for sample data description and sources.

Table 2: Determinants of FDI flows (1993-1999)  
Random-Effects GLS Regression

Variable	(1)	(2)	(3)
	<i>Coefficient</i> <i>(Std. Err.)</i>	<i>Coefficient</i> <i>(Std. Err.)</i>	<i>Coefficient</i> <i>(Std. Err.)</i>
GDPcapi	0.875 (0.873)	0.634 (0.872)	1.023 (1.026)
GDPcapj	0.867* (0.162)	1.037* (0.170)	1.888* (0.374)
Popi	0.780* (0.150)	0.722* (0.150)	0.904* (0.169)
Popj	0.786* (0.149)	1.020* (0.165)	0.933* (0.178)
Openj	—	0.993* (0.316)	0.598 (0.400)
Clij	—	—	-0.785* (0.264)
Distj	-0.618* (0.199)	-0.448** (0.205)	-0.612* (0.221)
Frontier	0.598 (0.578)	0.686 (0.574)	0.428 (0.590)
Constant	-12.962 (8.914)	-13.426 (8.868)	-25.310** (11.073)
N	1933	1933	1221
Wald Test (all coeff. =0)	278.08*	289.84*	158.48*
Std. Deviation Residual	1.036	1.035	1.026
Hausman specif. test	8.45	10.08	10.30

All variables are in logs. Dependent variable is the logarithm of FDI flows. Variables definition, countries used in regression and data sources are displayed in the appendix.

Time dummies were also included but are not reported.

(\*) and (\*\*) denotes values significant at 1% and 5% respectively.

These estimates suggest that FDI flows are positively influenced by the GDP *per capita* and trade openness of the host country,<sup>3</sup> and negatively by distance and relative labour compensation levels. The GDP *per capita* of the country of origin and the fact that investing and host countries share a common border do not seem to affect FDI. Population of the host and of the investing countries are both significant and positively related to FDI.

Such results indicate that, as suggested by theoretical analyses, both market and efficiency motives determine decisions to invest abroad. The positive relationship between host country's GDP *per capita* and population imply that the number of potential consumers and their hypothetical purchasing power are taken into account by international entrepreneurs when deciding the international allocation of investment funds. This is obviously the case of those projects directed to the supply of foreign markets. The negative relationship between labour compensation levels and FDI sustain the rationale for efficiency seeking FDI. In fact, some projects are implemented abroad with the objective of reducing production costs and are therefore attracted to areas where labour is less expensive, independently of its inherent qualification and/or productivity.

In contrast with the majority of previous empirical research, our study uncovers a positive relationship between FDI and the population of host and investing countries. The former appears mainly in studies developed with disaggregated data and is rare in those using total FDI flows. Our results are therefore in accordance with the outcomes of analyses performed with more detailed databases. The latter relationship, *i.e.* that between FDI and population of investing country is usually not tested. However, this positive link indicates that the larger the population, the more probable it is for domestic entrepreneurs to engage in foreign investments. A possible justification is that firms in more populated countries have higher possibilities of internally reaching the minimum efficient scale necessary to support the structures for international expansion. Countries that are relatively less populated, and that have relatively small potential demand, are less stimulating and less capable of generating the appropriate environment for the emergence of large-scale firms, that are those which are most probably prepared to expand their activities at the international level.

The positive relationship that appears to exist between host country trade openness and FDI inflows suggests that trade and FDI are complements and not substitutes, as it is sometimes argued. This result supports the argument that FDI is associated with the

---

<sup>3</sup> The degree of openness of the host country is statistically significant at the 1% level in the second model and significant at the 12% level in the third. These outcomes suggest that there is in fact a positive significant relationship between the two variables.



intensification of production segmentation, thus increasing the number of commercial exchanges at the international level.

The estimation results, and more specifically those of specification (3) are used to perform in-sample predictions of FDI flows to Portugal, Spain, Poland, the Czech Republic, Slovenia and Hungary. The objective is to assess FDI diversion from the EU periphery to the CEEC, by means of comparative analysis of the potential and current flows to these countries. It would be reasonable to expect that potential values would be below observed ones in the CEEC (values below unity in the indicator displayed in table 3), considering that these countries still hold FDI stocks below the volumes observed on average in the EU. The same could be expected to happen in the EU's Southern members, although with lower magnitudes, given that they also still present values much lower than the Union's average. In the calculus of FDI potentials, only the FDI flows from the major European investors are considered: Austria, Germany, Netherlands and France. The results are displayed in Table 3.

**Table 3: Potential and Current FDI Flows**

	(Potential/Current)			
	1996	1997	1998	1999
Czech Rep.	0.98	0.80	0.91	1.08
Hungary	0.59	0.96	0.70	2.52
Poland	0.49	0.92	-	-
Slovenia	-	-	0.56	1.02
Portugal	0.87	0.88	1.09	1.29
Spain	0.80	0.58	0.68	1.18

Source: Calculations use estimate values from specification (3) on table 2.

As expected, it may be concluded that there are not much difference among the several countries' results. In most cases the displayed values are below unity until 1998 (slightly lower for the CEEC but not as much as expected), and above unity in 1999. This latter result may suggest either a transitory phenomenon or that FDI stocks are already reaching their equilibrium levels in comparison with countries of similar characteristics in terms of the major determinants of FDI identified in the model. Therefore, no evidence is found of diversion of FDI flows from the Southern countries to the CEEC in these years. This does not guarantee, of course, that it could not happen in the future, as accession takes place and new developments unfold.

## 5 - Conclusions

The empirical assessment of the determinants of FDI suggests that international investments are mainly determined by host country characteristics such as its dimension, potential demand, openness to world trade and lower relative labour compensation levels. In terms of the investing country, the only significant feature is population, which appears to be positively related with the supply of FDI funds. These results suggest that in the future, countries such as Portugal, which is relatively less populated than other EU members and than most CEEC may have problems in attracting foreign investments. This may be the case due not only to the existence of a reduced potential demand but also to the fact that its purchasing power is also low. Countries with such features may become non-interesting for those investors engaged in market-seeking FDI. However, if the labour force is relatively cheap, even if not especially qualified, the area may continue to exert some attraction for efficiency-seeking investors.

Using a world macroeconomic model, Breuss (2001) predicts that the effects of enlargement on FDI flows will spur economic growth in the CEEC, especially due to capital accumulation and the renewal of capital stocks (as Baldwin *et al.*, 1997, had stressed before), but negatively affect growth in the current EU members, especially in the Southern countries (an asymmetry also noted by Baldwin *et al.*), either due to a diversion effect or to a crowding-out effect.

Possible FDI diversion was also empirically assessed in the present work. With the objective of examining whether the observed volume of FDI flows were above or below the potential values suggested by the model, in-sample predictions were performed for several CEEC and Southern EU countries. The results suggest that, contrary to what could be expected, there is no evidence of FDI diversion from the Southern European countries to the CEEC. These results suggest that the trends observed in FDI flows to these countries in the last few years merely reflect the expected upsurge of FDI inflows in the wake and immediately after accession, and the gradual downturn some years later, when FDI stocks reach a certain equilibrium level.

Even though there is no evidence of FDI diversion from EU peripheral countries, the empirical analysis suggest that these are the areas where more attention should be paid to the issue of attracting and maintaining foreign investments. These regions are known as suppliers of cheap and low qualified labour, and may therefore be of some interest to a number of investment projects, but are also relatively poor, weakly populated and distant from the EU core, which is an important source of direct

investment funds. Efforts should therefore be focused on the implementation of structural reforms capable of generating the necessary conditions to attract market-seeking FDI and upgrade the demand for efficiency-seeking projects.

## REFERENCES:

Altomonte, C. (2000), "Economic Determinants and Institutional Frameworks : FDI in Economies in Transition", *Transnational Corporations*, 9 (2), 75-106.

Baldwin, R., J. Francois and R. Portes (1997), "The costs and benefits of eastern enlargement: the impact on the EU and Central Europe", *Economic Policy* 24, 127-176.

Bevan, A. and S. Estrin (2000), "The Determinants of Foreign Direct Investment in Transition Economies", Centre for New and Emerging Markets, London Business School.

Brenton, P. and F. Di Mauro (1999), "The Potential Magnitude and Impact of FDI Flows to CEECs", *Journal of Economic Integration*, 14(1), 59-74.

Brenton, P., F. Di Mauro and M. Lucke (1999), "Economic Integration and FDI : An Empirical Analysis of Foreign Investment in the EU and in Central and Eastern Europe", *Empirica*, 26, 95-121.

Breuss, F. (2001), "Macroeconomic Effects of EU Enlargement for Old and New Members", Austrian Institute of Economic Research (Wifo), Austria.

Buch, C., R. Kokta and D. Piazzolo (2001), "Does the East Get What Would Otherwise Flow to the South? FDI Diversion in Europe", Kiel Working Paper 1061.

Egger, P. and M. Pfaffermayr (2000), "The Proper Econometric Specification of the Gravity Equation: a Three-Way Model with Bilateral Interaction Effects", mimeo, revision requested by Empirical Economics.

EUROSTAT Database – COMEXT, several years.

Holland, D. and N. Pain (1998), "The Diffusion of Innovations in Central and Eastern Europe: A Study of the Determinants and Impact of Foreign Direct investment", National Institute of Social and Economic Research, Discussion Paper no. 137.

IMD, The World Competitiveness Yearbook, Several issues.

Lankes, H.-P. and A. J. Venables (1996), "Foregn Direct Investment in Economic Transition: The Changing Pattern of Investments", *Economics of Transition*, 4 (2), 331-347.

Lansbury, M, N. Pain and K. Smidkova (1996), "Foreign Direct Investment in Central Europe Since 1990: An Econometric Study", *National Institute Economic Review*, 156, 104-113.

OECD Databases, Several issues and years.

Passerini, P. (2001) "The European Union's Share in Global FDI – 1995 to 1999", *Statistics in Focus*, Theme 2, 30/2001, Eurostat.

Resmini, L. (2000), "The Determinants of Foreign Direct Investment Into the CEECs: New Evidence From Sectoral Patterns", *Economics of Transition*, 8 (3), 665-689.

## APPENDIX

The empirical analysis is performed using OECD data on FDI outflows from Austria, Benelux, Denmark, Finland, France, Germany, Italy, Netherlands, Norway, Sweden, Switzerland, United Kingdom, United States and Japan to a total of 24 countries including all the present EU members, Japan, United States, Canada, Australia, Poland, Czech Republic, Hungary, Romania, Slovenia, Slovakia, Estonia, Lithuania, Latvia and Bulgaria, between 1993 and 1999, whenever data is available.

**GDPcapi and GDPcapj** – GDP per capita from origin country and destination country

**Source:** Chelem Database

**popi and popj** – population of both origin and destination countries

**Source:** Chelem Database

**Distj** – geographic distance in km between the countries capital

**Source:** <http://www.indo.com/distance/>

**Frontier** – dummy variable equal one if the countries share a common border

**CLij** – compensation levels of host country in relation to the compensation levels of origin country

**Source:** World Development Report

All variables are in constant values (1995 US dollars).