Complements or Substitutes? New Theoretical Considerations and Empirical Evidence on the Imports and inward FDI Relationship in Central and Eastern European Countries

Fragkiskos Filippaios♠∗

Constantina Kottaridi♦

Abstract

This paper addresses the imperative need to understand the relationship between inward FDI and trade by developing a new conceptual approach and providing empirical evidence. We use an expanded time dataset, from 1992 to 2008 and an enriched dataset of countries, sectors and location factors. In regards to the inward FDI vs. imports relationship, results comply with our theoretical formulation and strongly indicate an overall complementarity with each other. In the case of FDI we find strong locational characteristics such as the large market size, the gradual improvement of the macro-environment and finally the quality of labour force to play a positive role.

♠ Kent Business School, University of Kent, Canterbury, Kent
♦ University of Peloponnese, School of Management and Economics, Department of Economics, End of Karaiskaki Street, 22100 Tripolis, Greece, Tel: +30 2710 230134, Fax: +30 2710 230139, e-mail: kottarid@uop.gr
∗ Author to whom correspondence should be addressed: Kent Business School. University of Kent, Canterbury, Kent, CT2 7PE, United Kingdom, Tel: +44 (0) 1227 824222, e-mail: F.Filippaios@kent.ac.uk

Complements or Substitutes? New Theoretical Considerations and Empirical Evidence on the Imports and FDI Relationship in Central and Eastern European Countries

I.   INTRODUCTION

Since the early nineties, Central and Eastern European Countries (CEECs)[1], with the economic liberalisation process, the gradual opening up of their borders and their recent accession in the European Union (EU), have emerged as essential players in the international scene. Following the rapid globalisation process, characterised by increasing technological progress, new production, organisational and management systems and a constantly growing role for competition, the countries of this region are, nowadays, well engaged in trade with partner countries and at the same time host significant amounts of foreign activities.

Both trade and Foreign Direct Investment (FDI) can potentially enhance economic growth and development and therefore the examination of their relationship is of particular importance for the growth prospects of CEECs, especially in the context of an expanded EU. On theoretical grounds, there is a variety of approaches that model the FDI and trade relationship. These span from early theories of FDI, like the internationalisation theory and the eclectic paradigm, to general equilibrium trade and new trade theory models of Multinational Enterprises (MNEs). Until now, though, no common ground has been established between theoretical explanations coming from an international business or an international economics literature perspective. This paper contributes to the above discussion by developing a conceptual framework that provides explanations on the FDI Trade relationship focusing primarily on the issue of inward FDI and imports in an economy. The issue of whether increased inward FDI causes replacement or expansion of imports and vice versa has been examined both theoretically and empirically but continues to remain unresolved. It is of particular interest, therefore, to study the above relationship in the region. This paper places particular emphasis on two issues: on the issue of the interrelationship between inward FDI and imports, i.e. complementarity vs. substitutability and on the location determinants of inward FDI for the ten new EU member-states of CEE[2] and a candidate member state, Croatia. Our empirical exercise builds on

---

[1] United Nations Conference on Trade and Development (UNCTAD) changed the classification of countries in 2005; the eight former countries of CEE that first joined the EU are now classified into the developed ones along with Malta and Cyprus as the 10 new member states of the European Union (EU). The rest of the countries including Bulgaria and Romania have been classified in the region covering the South-East and the Commonwealth Independent States (CIS). Croatia belongs into this latter region. For analytical purposes we refer to these countries as commonly known, i.e. CEECs.
[2] The new EU member states are Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic, Slovenia and the recently accessed Bulgaria and Romania.

the three-stage least squares (3SLS) technique developed by Zellner and Theil (1962). This technique allows us to derive intuitive conclusions on both inward FDI and imports' driving forces as well as on the existing link between the two.

According to a survey by Ernst & Young (2010) CEE is regarded by international executives as the third most attractive foreign investment location after Western Europe and China and is the second most favoured place for investments in manufacturing industries. The stylized facts regarding FDI inflows into the region are a clear manifestation of the region's importance for international investors. Although global FDI inflows in the turn of the century declined by more than 40% following the global economic slowdown, flows into this region grew by 2% in 2001 and as of 2010 these countries were considered by international executives as the third most attractive foreign investment locale after Western Europe and China and were the second most favoured place for investments in manufacturing industries. Further data from United Nations Conference on Trade and Development (UNCTAD) presented in Table 1 show that these countries have only been affected by the crisis in 2009 and their levels of inward FDI have picked up again in 2010.

Insert Table 1 here

Within this context the present study contributes in five major ways:

Firstly, we develop a new conceptual approach based on Dunning's (1981; 1986) Investment Development Path (IDP), to study the relationship of inward FDI and imports. Our argumentation adopts a multidisciplinary approach, adds to the existing theoretical explanations and further enhances the active mainstream literature on the role of FDI on trade.

Secondly, on the grounds of the above theoretical conceptualisation, we develop and operationalise a number of empirically testable hypotheses linked to the factors that are more likely to influence imports and inward investment decisions in countries that are in transition from centrally planned to market economies.

Our third key contribution is primarily empirical and is based on the fact that we carry out our analysis not only on aggregate inward FDI and imports, as most of the empirical studies up to this point, but we further differentiate among the primary, secondary and tertiary sectors of the economy, i.e. agriculture, manufacturing and services. We theoretically assume and empirically demonstrate that activities in these

different sectors will display different behaviour in the various stages of economic development as defined by Dunning (1981;1986) in IDP.

Fourthly, our research focuses on an expanded CEE region (including not only the current EU member states but also a candidate country with similar characteristics, i.e. Croatia), for which, to the best of our knowledge, this relationship has not been explored, for an extensive time span covering up to the most recent year of 2008. To capture differences between countries we use a number of variables capturing the different paths towards accession that these countries have followed as well as the different decisions made by EU bodies regarding their progress.

Our final contribution is the enrichment of our empirical analysis with variables capturing not only the effect of the overall macroeconomic but also the institutional environment in these particular countries. We incorporate variables that capture the overall investment profile of the country, government stability, the health of legal framework, corruption in politics and the quality of bureaucracy as well as variables that capture socioeconomic distress. It has been clearly demonstrated in the literature that these variables significantly influence international investors' decisions (Daude and Stein, 2007; Bellos and Subasat, 2012), especially in the context of CEECs, and contribute towards understanding how the levels of political and economic stability affect inward FDI and imports relationship in transition economies. Very limited studies have accounted so far for such factors in the region under consideration, The work of Grosse and Trevino (2005) is an exception on these grounds.

The remainder of this study is organised in the following sections: The next section investigates the relationship between FDI and trade and the FDI determinants through the lens of a thorough literature review. Section 3 conceptualises our framework and leads to the model and hypotheses formulation in section 4. Section 5 presents and discusses the results whilst section 6 concludes the paper offering plausible policy recommendations and implications.

II. UNDERLYING FRAMEWORK: INWARD FDI – IMPORTS RELATIONSHIP IN CEECs

A country's development path, as suggested by Dunning (1981;1986) is not independent of its inward FDI flows. MNEs through FDI, transfer new technologies and innovative ways of production thus enhancing the growth and the development process of the host economy. This process is further augmented

through externalities to local firms and training of the local labour force. This development process is described in Dunning's IDP (1981) and the underlying eclectic paradigm [Ownership, Location, Internalisation framework (OLI)]. In a seminal paper published back in 1981, Dunning explains the International Investment Position of countries using "…a Dynamic or Development Approach".

In detail, IDP describes five stages of development through which, countries are distinguished by their propensity to be outward and/or inward investors. This propensity rests on the extent and pattern of the competitive or ownership specific (O) advantages of the indigenous firms relative to those of other countries (ownership advantages regard intangible knowledge, managerial or marketing advantages, brand names etc); the competitiveness of the location-specific advantages (L) relative to those of other countries; and the extent to which indigenous and foreign firms choose to utilise their O advantages jointly with the location-specific resources and capabilities of home or foreign countries through internalising (I) the cross-border market for these advantages rather than by some other organisational route.

The countries of CEE belonged to the second stage of development for the decade of nineties and some of them have only recently moved to the third stage. This means that domestic markets may have grown either in size or in purchasing power. Hence, for the time period under examination, the CEECs experienced the undertaking of some local production by foreign investors which seemed as a viable and profitable alternative to imports. The L advantages of the potential host are decisive, especially for export-oriented industries, which basically exploit natural resources and primary commodities, creating forward vertical structures in their production into labour-intensive low technology and light manufactures (Dunning and Narula, 1997; Venables, 1999; Zhang and Markusen, 1999). Simultaneously, the O advantages of domestic firms will have increased from the previous stage and will exist due to the development of support industries. Recently, Dunning *et al*. (2001) further elaborated this discussion by providing a link between the IDP and the Trade Development Path (TDP) in their study of Korea and Taiwan. The main point of argument posits that the *"character composition of both trade and FDI also change as development proceeds"* and *"in stages I and II, both trade and FDI are likely to be between different industrial sectors…"* (p. 146). Along the lines of this expanded framework, it is predicted that FDI would take place mainly in below average and average (according to their classification) FDI intensity sectors, while imports would appear in above average FDI intensity sectors to conclude that *"the growth of trade and FDI tends to be positively correlated with GNP per capita and with the created asset intensity"* (p. 151).

III. MODEL FORMULATION AND UNDERLYING HYPOTHESES

In the previous section we argued that the countries under investigation are classified as stage-two countries for the longest period of our time span and some of them as stage-three countries only lately according to the IDP. During their second stage of the IDP, the CEECs gradually built some desirable L characteristics to attract foreign investors. At the same time, the opening-up of borders in the early 90s allowed for importing a number of (basically) consumer goods that have previously been excluded from those markets. In addition, for countries belonging to the first and second stages, according to Dunning et al. (2001), inward FDI and imports[3] are very likely to be in different sectors. We can distinguish here three sources of increased imports for the CEE region. Two of those sources are related to the stage of the IDP and one is specific to the particular region under investigation. The first two correspond to either imports directed to different sectors than FDI or imports of intermediate inputs required in production. The third source, which is idiosyncratic to the region, reflects the increased import flows due to the opening-up of borders.

Given the lower production costs in the region, foreign investors are likely to move there those stages of production that are resource or labour intensive, i.e. assembling of final goods. In this case, imports of intermediate inputs in production would be inevitable. That would then result in an increasing amount of FDI followed by significant import flows aiming at complementing foreign production.

On the other hand, the increased imports will consequently further boost the FDI attracted in the local economy. As the production base of the country augments and trade liberalises, a greater than before number of foreign investors consider the host country as an attractive location and thus invest there. This behaviour acts as the starting point to a virtuous cycle in inward FDI- Imports relationship.

Following the preceding analysis, two are the major hypotheses (H) to be tested in line with our theoretical argumentation. The first hypothesis concerns the relationship between inward FDI and imports and is formulated as follows:

H1: There is a complementary relationship between inward FDI and imports for the countries of CEE under consideration according to their IDP position.

---

[3] Dunning et al (2001) refer in general to FDI and trade, however, elaborating the argument, the relationship refers to either outward FDI and exports or to inward FDI and imports which is our case here.

The second hypothesis reflects the determinants of inward FDI for countries in the second stage of the IDP[4]. This second hypothesis will be broken down to several sub-hypotheses below. Building again on the characteristics of the second stage of the IDP as discussed earlier and on Dunning and Narula (1997) and Narula and Dunning (2000), the second hypothesis is formulated as:

H2: *The existence of certain location-specific advantages (S), in the second to third stage of IDP countries, will exert a positive influence on inward FDI.*

On the above grounds, we hereby place particular emphasis on institutional quality as captured by a number of utilized variables. Schmieding (1993) states that institutions encompass not only bureaucracies and administration but also, more importantly, the entire body of formal laws, rules and regulations as well as the informal conventions and patterns of behaviour that constitute the non-budget constraint under which economic agents can pursue their own individuals ends. Further to the this, the quality of institutions enables the reduction of information asymmetries, through better information on market conditions, goods and participants, which in turn can encourage investment, either domestic or foreign.

In order to test our hypotheses, the following system of equations is estimated[5]:

$$FDIINFLOWS_{it} = \alpha_1 + \alpha_2 IMPORTS_{it} + \alpha_3 REALGDP_{it} + \alpha_4 PRIMARYEDU_{it} +$$
$$+ \alpha_5 SECONDARYEDU_{it} + a_6 REALINTEREST_{it} + a_7 ULC_{it} +$$
$$+ a_8 R\&D/GDP + a_{19} INVESTMENTPROF + a_{10} BUREAUCRACY_{it} +$$
$$+ a_{11} CORRUPTION + a_{12} GOVERNMENTSTAB_{it} + a_{13} LAW\&ORDER$$
$$+ a_{14} M\&ASALES + DUMMIES + \varepsilon_{1it}$$

$$IMPORTS_{it} = \beta_1 + \beta_2 FDIINFLOWS_{it} + \beta_3 REALGDP_{it} + \beta_4 GDPPERCAPITA_{it} +$$
$$+ \beta_5 TRADE/GDP_{it} + \beta_6 TRADETAXREV_{it} + \beta_7 SOCIOCONDITIONS_{it} + \varepsilon_{2it}$$

Where *i* stands for the country under consideration and *t* for the respective year.

The FDI equation[6] (FDI INFLOWS), where FDI is measured in inflows, is a function of imports (*IMPORTS*). Though a considerable amount of FDI in the region has taken place through privatisation and

---

[4] We refer to the second stage as the countries under consideration belonged to this stage for the longest period of our analysis.
[5] In the FDI Equation we used alternatively the variables TECHNOLOGY and R&D/GDP but for simplicity we report here only the later one.
[6] It must be mentioned here that all of the studies carried out for the CEECs, are country-level, either dealing with total FDI inflows in the region or bilateral flows from some advanced origins to CEEC destinations, for there is lack of *"consistent and detailed sectoral data"* (Resmini, 2000, p.666). The only exception belongs to Resmini (2000) who analyses the determinants of FDI inflows in the manufacturing sector of twelve host CEECs, following the Pavitt (1984) taxonomy (the Pavitt taxonomy distinguishes among scale-intensive, high-tech and traditional sectors and specialized producers).

acquisitions, the rationale for making such investments still holds regardless of the entry mode[7]. It is worth mentioning here that whilst our analysis is based on differentiating between the three sources of imports in our empirical analysis, this is not plausible due to data limitations; nevertheless we are able to distinguish among imports in agriculture, manufacturing and services.[8] Based on the existing literature on FDI determinants in general but also with regards to the specific region under consideration, we included the following explanatory/control variables: for the FDI equation, we included Real Gross Domestic Product (*REAL GDP*) that captures 'market- seeking behaviour' as this constitutes a strong characteristic in the second stage of IDP and consequently we expect a positive relation[9]. The opening up of CEECs' markets was the obvious choice especially for firms whose established markets in the West were saturated (Lankes and Venables, 1996; Meyer, 1998; Boeri and Brücker 2000; Bevan and Estrin, 2000; Clausing, 2000; Altomonte and Guagliano, 2001; Rojec and Jaklic, 2002).

     H3: Real GDP is expected to have a positive influence on FDI

     The specific factor *S*, mentioned in H2, is captured by the potential of the local economy in creating skills to the labour force. This is captured by two intensity measures capturing the number of teachers per pupils in primary and secondary education (*PRIMARY EDU* and *SECONDARY EDU* respectively). Dunning (1988) maintains that the skill and education level of labour can influence both the volume of FDI inflows and the activities that MNCs engage to in a county. The availability of skills plays a crucial role for *"the implementation of innovative production technologies and to the adaptation to a Western business culture"* although *"this technology remains less advanced than in the home countries"* (Carstensen and Toubal, 2004; p. 17 and p. 9 respectively; Rojec and Jaklic, 2002).

     In particular, a high secondary education intensity measure indicates the existence of a skilled labour force that can adapt to new production methods in a highly productive way. In this case a positive sign will be in support of the emerging new patterns of specialised location determinants[10].

---

[7] The entry modes are distinguished in greenfiled investment, mergers and acquisitions (through privatization), nevertheless, all types of entry mode regard long-lasting interest in the respective host, and thus country location factors are significant prerequisites for all.
[8] The use of a different measure of imports, normalized by the total trade, or the GDP of the country does not alter the results. Also the inclusion of a lagged FDI and Imports variable in the estimations does not alter the results, which are available upon request from the authors.
[9] It is noteworthy that large markets hold also a particular role in new trade and new economic geography theories, as they reflect the potential of firms to capture economies of scale (Krugman, 1980, Amiti, 1998). Other studies that traditionally use real gross domestic product include Buckley and Casson (1981); Dunning (1993); Aristotelous and Fountas (1996); Clegg (1995); Clegg and Scott-Green (1999); and Mold (2003)
[10] The empirical evidence is vast; a few and influential studies belong to Dasgupta et al. (1996), Narula 1996, Noorbakhsh and Paloni, 2001).

H2a: *Primary education intensity is expected to have a positive impact on FDI*

H2b: *Secondary education intensity is expected to have a positive impact on FDI*

Labour costs are captured by unit labour cost (*ULC*) reflecting a more traditional 'efficiency-seeking behaviour'[11]. This investment behaviour is closely related to second stage IDP countries where FDI takes place primarily for gaining efficiency in production. Taking into consideration that the dominant investors are the more advanced European countries and the US, a negative sign will consent to the location's characteristics expected for a second stage IDP country. Labour costs have been found to exert a significant effect on foreign investments in the region, either when examining solely the wages (Holland and Pain, 1998) or when taking labour productivity into consideration (Bevan and Estrin, 2000; Weiss et al., 2001; Egger and Stehrer, 2003)[12].

H4: *Unit Labour Costs (ULC) are expected to have a negative impact on FDI*

The real interest rate (*REAL INTEREST*) is included as a measure of risk premium for the economy on the grounds that a higher interest rate implies a non-credible and non-stable market on the one hand, and a significant cost to investors for raising capital from the local financial market, thus advantaging financial capital flows from abroad. Uncertainty with regards to macroeconomic conditions, as well as the institutional framework, has been found in the related literature to exert a negative impact on inward FDI into the region (Holland and Pain, 1998; Bevan and Estrin, 2000). More recently, Aizenman and Noy (2000) use the interest rate spread and Pantulu and Poon (2003) use the exchange rate as alternative measures.

H5: *The real interest rate (REAL INTEREST) is expected to have a negative impact on FDI*

Complementing our second hypothesis we also incorporated two variables capturing the potential of the economy to generate new knowledge and innovation. The first measure captures the Royalty and Licence Fees receipts over payments (*TECHNOLOGY*) as measured in the balance of payments accounts. This variable demonstrates the knowledge flows and their particular payments with respect to the host economy. The second measure is the Research & Development expenditure over GDP (*R&D OVER GDP*) and captures the commitment of the host economy to create those conditions that would enable local as well as foreign firms to create new knowledge (Neven and Siotis, 1996). The effect of those two variables on

---

[11] Cost factors are at the heart of the Hecksher-Ohlin traditional trade theory. Foreign investments are considered to be motivated by production cost differentials, which investors exploit in order to increase their profits by reducing their cost of production. It is, however, beyond the scope of this paper to explain FDI determinants within this framework.
[12] See also Lansbury *et al.* (1996), Meyer, (1998, 2001) and Hardy (1994).

FDI though, especially for countries that are in the second stage of development is ambiguous. In principle, foreign firms are attracted by economies that have the potential to create new knowledge. Contrary, though, this variable can capture the building of host firms' advantages which could result in intense competition or even higher labour costs.

H6: The effect of technology and R&D related variables on FDI can be either positive or negative

In order to account for the overall macro-environment we also included six variables capturing the investment profile, the quality of the bureaucratic system, the existence of corruption in politics, the government's stability, the existence of a cohesive legal framework and the amount of Mergers and Acquisitions in the host economy. The investment profile (*INVESTMENT PROF*) is a measure of expropriation risk, contract viability, the easiness in profit repatriation and the payment delays. Bureaucratic Quality (*BUREAUCRACY*) acts as a supplement to the government's stability. In countries with a good rating, the local bureaucracy can facilitate policies, act in an autonomous way of political pressures and offer to the international investors a stable partner irrespectively of the governmental changes. Corruption (*CORRUPTION*) measures the risk of corruption in politics which can indirectly influence the cost of entry or operations especially for international investors. Government's stability (*GOVERNMENT STAB*) is a combined measure of government's unity, legislative strength of the constitution and popular support to the government. It measures the ability of a government to stay in power and carry out its policies and programme. This stability is of particular importance to international investors as it gives them security over the countries' policies. Law and Order (*LAW & ORDER*) act as a safety net for international investors against expropriation risks or any other contractual disagreement and dispute with local partners. This variable represents the strength and impartiality of the legal system as well as the popular observance of the law. Finally, Mergers & Acquisitions sales (*M&A SALES*) measure the overall risk of the economy in the sense that they indicate a more liberal and healthy environment as well as the liquidity of the local market in the case of disinvestment. The higher the volume of those the easiest would be for a multinational to either enter or exit from a market. Moreover, a high volume of M&A sales corresponds to more mature markets[13].

---

[13] Some of these variables have been use by other scholars, e.g. Daude and Stein, 2007 (voice and accountability, political stability and lack of violence, government effectiveness, regulatory quality, rule of law and control of corruption) Bellos and Subasat, 2012 (governance, corruption), Jadhav, 2012 (control of corruption, government effectiveness, no violemce) though not for Central and Eastern Europe.

H6a: We expect a positive influence of the stability of the macro-environment, as captured by the different variables (INVESTMENT PROF, BUREAUCRACY, GOVERNMENT STAB, LAW & ORDER and M&A SALES) on FDI

H6b: We expect a negative influence of corruption in politics (CORRUPTION) on FDI

To adjust for country and time effects we also included the following dummies: for cultural proximity of the Baltic States to the Nordic countries we implore a dummy variable, *BALTIC* as FDI also is assumed to differ in the Baltic region firstly due to their geographical distance from the rest of Europe and secondly because they receive flows from particular origins due to cultural factors (Brainard, 1997; Meyer, 1998; Ebbers and Todeva, 1999; Boeri/Brücker *et al.,* 2000; Bevan and Estrin, 2000).

The method of privatisation followed may act to a greater or lesser extent as a stimulant to foreign investors hence a dummy (*METH*) is included for those states that have followed direct sales to strategic owners as a privatisation method according to the EBRD (various issues).

FDI flows are also considered to be influenced by the reaffirmation of the Madrid European Council about EU enlargement in 1995 (Bevan and Estrin, 2000)[14], thus, we incorporate a time dummy variable from 1995 onwards, namely, *ENLARG*. Finally, another dummy that has been included accounting both for country and time specific effects, regards the Agenda 2000 announcement released after the European Commission meeting in Amsterdam in 1997. During that meeting, two groups of countries were identified according to their transition progress. It is important, hence, to investigate whether the first wave countries received indeed greater amounts of FDI from 1997 onwards *(WAVE1)*.

The imports equation is basically standard: imports are positively affected by the level of foreign investments that take place in line with our theoretical analysis. A set of control variables was also included, measuring the market size of the importing country (*REAL GDP*), GDP per capita (*GDP PER CAPITA*), the trade openness of the local economy as measured by the percentage of imports and exports over the GDP (*TRADE OVER GDP*) and the taxation of imports (*TRADE TAX REV*). We expect the first three variables to exert a positive influence on imports and the fourth one a negative one. Particular attention must be paid on *GDP PER CAPITA* because this indicates the respective development level of a country and, consequently, its needs for more advanced and qualitative goods produced in Western markets. To further

---

[14] A very interesting from a policy implications' perspective study, though indirectly linked to CEEC countries, belongs to Breuss *et al.* (2001). They study the effect of Agenda 2000 reform of structural expenditures on outward FDI stocks from OECD countries in the EU.

explore this relationship we included in the analysis a more qualitative variable, which captures the socioeconomic conditions in the countries under investigation (*SOCIO CONDITIONS*). This variable is a composite one and consists of measures of the unemployment rate, the consumers' confidence and the poverty levels in the local economy. High levels of those three sub-components would indicate a higher income inequality and might be the case of social dissatisfaction and distress, significantly affecting imports in a negative way according to the International Country Risk Guide[15].

IV. SAMPLE AND METHODOLOGY

V.a The sample

The sample includes the ten new members of the enlarged EU, i.e. Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic and Slovenia, the two recently accessed countries, i.e. Bulgaria and Romania and a candidate member, i.e. Croatia. The time period covered extends from the early transition stages in 1992 till 2008. Our last observation corresponds to year 2008 and reflects the end of a period of transition for most CEECs. By 2008, all CEECs have become EU members and have mostly accomplished all the major transition reforms as directed by the EU. In this year, the Czech Republic was taken off the list of transition countries and was awarded a status of a developed European economy (Schwab, K., and Porter, M. 2008). Furthermore, from the data collection point of view, we have identified data availability constraints[16] after 2008. Descriptive statistics of our sample for different time periods are presented in table 3[17].

Insert Table 2 here

It is evident from table 2 that there is a substantial increase in FDI inflows to the CEE economies from the first time period to the last one. The mean of FDI inflows shows a fivefold increase from the period before 1997 to the period after 2002. There is a significant improvement in the economic conditions of these countries as real GDP and GDP per capita show a steady increase from 1992 to 2008. This increase comes with an improvement in the cost of capital (REAL INTEREST) especially after 2002. On

---

[15] http://www.prsgroup.com/ICRG_Methodology.aspx
[16] Data availability constraints exist after 2008 on institutional data (ICRG, 2008).
[17] The three time periods correspond to the early stages of transition (before 1997), the mature stage (between 1997 and 2002) and a stage where most of these countries are beginning their final preparation to the EU accession (after 2002). To choose among various breakpoints in our sample we also employed the Supremum F test, which involves estimating all Chow F statistics for each potential breakpoint in the sample and choosing the one where the F statistic was higher. When this test was implemented the breakpoints were determined at 1997 and 2002. The relationships before, between and after these two breakpoints are further explored in the following empirical part of the paper. The full correlation of our variables is presented in Appendix 2.

the other hand it is evident that the cost of labour, as captured by the unit labour cost (ULC) is increasing and it is almost double in the third period compared with the period before 1997.

The intensity of primary education remains relatively stable over the period whilst the relevant measure corresponding to secondary education shows a steady increase. The two variables capturing the R&D intensity of the economy show that while the spending on R&D over GDP remains stable, the technology creation in the economy as captured by the Royalties and Fees receipts over payments (TECHNOLOGY) shows a constant deterioration from 1992 to 2008. Finally, the mean of the trade over GDP shows a gradual opening of the economies under examination whereas the tax revenues from trade remain stable. This indicates a reduction of the tariffs and other trade related taxation.

All the variables capturing risk and the institutional environment show a stable improvement with the variable capturing the overall investment profile (INVESTMENT PROF) of the country having the most significant improvement. The variable capturing the merger and acquisition sales (M&A SALES) in the local economy also shows a significant improvement from the first to the last period with an overall fivefold increase. This increase is in line with the increase in FDI inflows in the economies under investigation.

Data were collected from the European Bank for Reconstruction and Development (EBRD), International Financial Statistics (IFS), International Labour Office (ILO), United Nations for Cooperation on Trade and Development (UNCTAD), World Bank (World Development Indicators) electronic databases, The Vienna Institute for International Economic Studies (WIIW), The International Country Risk Guide, the Economist Intelligence Unit (EIU), COMPUSTAT (primarily for the exchange rates) and occasionally the Central Banks of the countries under investigation. An analytical description of the incorporated variables as well as their sources may be found in Table 3.

Insert Table 3 here

V.b Econometric techniques

The present study differs from other relevant articles in the literature testing the inward FDI-imports relationship in that we depart from conventional testing of gravity models used elsewhere (Pantulu and Poon, 2003; Clausing, 2000) or simple regression tests (Swensson, 2004; Aizenman and Noy, 2005) and proceed with Zellner and Theil (1962) 3SLS (Three-stage Least Squares) estimator to get consistent and

efficient estimators of the system in order to account for endogeneity. The 3SLS satisfies the requirements for an IV (Instrumental Variable) estimator and therefore is consistent.

V. RESULTS AND INTERPRETATION

Our first set of results is presented in table 4[18]. At a first stage, the model is estimated without the macro-environment or the dummy variables (model 1). At later stages, we include the macro-environment, regional and time dummies (models 2 to 9).

Insert Table 4 here

Overall the results confirm our hypothesis on the complementary relationship between inward FDI and imports (i.e. model one). Imports statistically affect FDI inflows and the relationship is quite strong the other way round as well. This strong relationship is supported in the different specifications used later on (models two to nine). The coefficient of REAL GDP, capturing 'market-seeking' behaviour is also significant showing a strong market seeking motivation for investments in the region.

Our second hypothesis with regards to the availability of the specialized factor *S* (as approximated by *PRIMARY EDU* and *SECONDARY EDU* respectively) is also proven to be true. There is though a clear-cut difference between the effect of primary and secondary education intensity on FDI. The PRIMARY EDU is never significant and generates an ambiguous negative effect. The secondary education (SECONDARY EDU) intensity though, which stands for medium workforce capabilities and skills, provides a positive and statistically significant sign in almost all regressions (with the exception of model 2). This result is further reinforced by the negative sign of the unit labour cost (ULC) for the FDI equation. Those two findings come in support of the 'efficiency-seeking' behaviour of investors in the CEE region.

In contrast, the sign of R&D OVER GDP is negative and statistically significant, indicating that the commitment of an economy towards the creation of new knowledge and innovation rather acts as a deterrent to international investors when their motivations are of a traditional nature like the market and efficiency seeking. This variable can also capture the ability of local firms to create competitive advantages

---

[18] Stationary tests (Im, Pesaran and Shin, 1997) showed no evidence on the existence of a unit root. These results were suppressed due to size constraints but are available upon request from the authors. The Im, Pesaran, Shin test were calculated using the IPSHIN routine in STATA v.10.

and compete with multinationals. As long as the investment motivations are capturing primarily a traditional behaviour, i.e. market or efficiency seeking, this intensity in competition acts as a deterrent to entry for international investors.

The coefficient for REAL INTEREST, although has the hypothesised negative sign, is never statistically significant and this complies with results obtained by Aizenman and Noy (2005).

The variables measuring the institutional stability of the environment have their hypothesised signs but only LAW & ORDER is statistically significant in some specifications. This finding reveals that the existence of a local market, as measured by REAL GDP and cheap labour force, as captured by ULC, are far more important for international investors in a region where the 'efficiency-seeking' motivation of FDI dominates.

The final measure of risk included in the model, i.e. M&A SALES has a strong and positive sign across the different specifications (models 5 to 9) demonstrating that FDI relies heavily on the ease and compatibility of operations in the local economy.

Results remain consistent with the above when the *BALTIC* dummy is added to the model (model 6). Cultural proximity and ties with Finland and Sweden (Holland and Pain, 1998), for the Baltic countries (Estonia and Latvia) do not seem to affect positively their capability in attracting foreign investment. Contrary, the reliance on rather peripheral international investors reduces the amount of FDI INFLOWS in the host economy. The speed of privatization (METH) on the other hand has a positive impact for those countries that have shown better performance in this respect (model 7). Both variables capturing the process of integration in the EU are insignificant. Contrary to our expectations, ENLARG produces a positive but insignificant result (model 8). The variable has the hypothesised positive sign but remains insignificant. This result, with respect to the positive sign of ENLARG, conforms to Breuss at al. (2001) and Bevan and Estrin (2000) for the role of announcements in inward FDI in the region. Finally, WAVE1 dummy, stemming from Agenda 2000 announcement, does not indicate significantly higher inflows both for specific countries, i.e., Czech Republic, Estonia, Hungary, Poland and Slovak Republic, and for the years 1997-2000 (model 9).

At the same time, in the imports equation, both REAL GDP and GDP PER CAPITA give very strong positive signs. The effect of REAL GDP is straightforward while the per capita income (GDP PER CAPITA) may be perceived as having demand-side and supply-side influences and the way it affects

imports may alter as it changes. On one hand, taken as a measure of consumer taste, it indicates the appropriateness of foreign production for host country markets, whilst on the supply-side GDP per capita *"may well be related to the technological and managerial capability of the host country"* (Papanastassiou and Pearce, 1991). Rising GDP PER CAPITA is expected to affect imports positively on the grounds that consumers desire more advanced and qualitative products produced elsewhere in the world, which local industrial structures cannot support (Linder effect, Linder 1961). The trade variable, i.e. openness of the local economy is insignificant in all specifications. Contrary, taxation on international trade turns out to be negative and significant. This indicates that trade barriers overall have negative and significant effects. Finally, the socioeconomic conditions do have a positive effect but an insignificant one.

In order to gain further insights on the FDI-Imports relationship and the effect on each other we decided to break down our sample into three different periods. The first, early years of transition (before 1997), the main transition phase (between 1997 and 2002) and the final steps of preparation for EU accession (after 2002). The results are reported in Table 5.

Insert Table 5 here

In the first period, imports affect FDI in a positive and statistically significant way whilst FDI shows no impact on imports. It is the beginning of an imports induced FDI cycle as described by the IDP. This conforms to Dunning's rationale (1981) that in the early stages FDI will be of the form of import substituting investment. This reveals that companies prefer to service the markets primarily through exports and whenever possible complement those with FDI. In the second period the opposite relationship holds with FDI affecting imports in a positive and statistically significant way, whilst imports do not affect in a statistically significant way FDI. This shows that gradually an FDI basis, from the previous period, was built and now imports complement FDI especially in the form of intermediate goods. This can be interpreted as FDI driven imports, which corresponds to Helpman's (1984) hypothesis on capital and services' flows from the headquarters to the plants (vertical FDI). During the final period the CEE countries have entered the hypothesised virtuous cycle of FDI-Imports attraction discussed in the previous sections. This argument is further reinforced by the signs and statistical significance of other variables in the estimations of table 5. The existence of SECONDARY EDU plays a significant role only in the early

16

stages of transition and the later stage of preparation to the EU accession, whilst R&D OVER GDP acts as a deterrent only in the first and second period. For the main period of transition between 1997 and 2002 four variables affect FDI INFLOWS. The cost of labour as captured by ULC, GOVERNMENT STAB that shows the determination of governments to push forward the transition process, LAW & ORDER as capturing the improvement of the overall legal environment and of course the M&A SALES as a potential entry method for international investors. This differentiation in behaviour among the periods is in line with Bergsten *et al*. (1978), Pearce (1982) and Svensson, (1996) who evidence that the relationship varies over time.

Overall, our results conform to the majority of the existing empirical literature on FDI-Trade relationship which points to a complementary relationship. It is supportive of our theoretical argumentation of this relationship for countries belonging to the second stage (stepping to the third stage) of IDP, giving credit to Dunning's IDP framework (2001). Combining the results, it is evident that FDI is directed to Central and Eastern Europe mainly to take advantage of the new markets and exploit the cheap labour cost The availability of a skilled but cheap labour force and the levels of the domestic income seem to have influenced to a great extent inward foreign investment in the region, which is actually expected. The growing attractiveness of the region is gradually reinforced by the improvement of the macroeconomic environment.

We have also estimated the results presented in Table 5 with the inclusion of dummies (BALTIC, METH, ENLARG, WAVE1). Results for the models remain overall the same[19] and the following observations can be made for the different dummies used. The BALTIC dummy becomes insignificant for the period before 1997 but keeps its negative and significant sign for the two periods after 1997. Both countries before 1997 are at the early stages of their transition process and thus the amount of FDI flows is rather small. The METH dummy is positive only in the prior to 1997 period. This is the period of major privatizations and this is reflected in the statistical significance of this dummy which keeps its positive sign but becomes insignificant after 1997. The ENLARG dummy was not significant in our overall model presented in Table 4 but now becomes significant for the period before 1997 and the period between 1997 and 2002. For the first period the dummy is negative and significant indicating increased levels of risk for the European integration process that lead to reduced FDI inflows but becomes positive and significant for

---

[19] Results can be obtained from the authors upon request.

the period between 1997 and 2002 after the reaffirmation of the Madrid European Council decision on EU enlargement. This increases the stability in the region, reduces uncertainty and attracts increased FDI flows. Finally our WAVE1 dummy remains negative but with significance only after the 1997 periods. This could capture the increased competition in these countries that could act as deterrent to increased FDI flows.

A final step towards understanding the FDI-Imports relationship was to break up FDI and imports into different industrial sectors. This would fully complement our analysis on the three different channels of imports and their effect on FDI. This analysis would also provide some further insights on the transition of those countries from stage 1 to stages 2 and 3 of the IDP. The results on the different sectors are presented in table 6. We decided to present here the effect of imports in agriculture, manufacturing and services on the total FDI and the effect of FDI in agriculture, manufacturing and services on the total imports. The results from the individual effects do not alter the picture.

Insert Table 6 here

This set of results further supports our previous argumentations and hypotheses. During the first period we have a strong complimentary relationship between all types of imports and FDI whilst FDI complements imports only in agricultural activities. FDI in services during this same period substitutes imports whilst FDI in manufacturing activities does not show any kind of statistically significant relationship with imports. In the second period, imports both in agriculture and manufacturing are substituting FDI whilst complement FDI in services. In the imports equation, it is evident that FDI now complements imports in both agriculture and manufacturing. Finally, in the third period, in the imports equation results remain similar to the previous period with the exception of FDI in agriculture which shows now no significant impact on imports, whilst imports are still primarily driven by FDI in agriculture and manufacturing. These results reveal a change in the structure of the economies under examination similar to the one hypothesised by the IDP and conform to Dunning et al. (2001) who argue that for countries belonging to the first and second stages, FDI and trade are very likely to be in different sectors.

Similarly to Table 5 we have also estimated results of Table 6 with the inclusion of dummies. Results for the models remain overall the same[20] and the following observations can be made for the dummies used.

---

[20] Results can be obtained from the authors upon request.

The dummy BALTIC keeps its negative and significant sign. The dummy METH changes sign and remains statistically significant. The dummy has now a negative sign indicating that once controlling for sectors the privatisation methods with direct sales to strategic investors is perceived as an obstacle for a lot of foreign investors. This could be the result on monopolistic powers emerging in the markets and thus reduced opportunities for market expansion. The ENLARG dummy remains insignificant whilst the WAVE1 dummy remains negative but gains significance. This follows the argument raised above, when discussing the different time periods, on the increased competition.

VI. CONCLUDING REMARKS AND POLICY IMPLICATIONS

This paper addresses this imperative need to understand international investors' behaviour as well as the relationship between inward FDI and imports. The paper uses the most expanded data span in the current literature, from the early stages of transition to nowadays and an enriched dataset of countries and location factors.

In regards to the inward FDI vs. imports relationship, results strongly indicate an overall complementarity when examining FDI inflows. Our results show the gradual transition from an Imports induced FDI-Imports cycle to an FDI one and finally towards the latest stages of development (after 2002) to a virtuous FDI-Imports succession.

Another important issue that could be further highlighted is the 'core-periphery' issue within an enlarged EU. The effect of EU enlargement seems to act in a positive way for the FDI attraction potentials of those countries. FDI in these countries almost tripled in the period after the announcement of EU enlargement. It is too soon to address, however, this issue in depth due to the recent adhesion date of these countries. This study though offers a holistic framework of research, applicable to other cases as well. Further examination of the inward FDI-Imports relationship and the determinants of inward FDI in the region may be of concern to other countries' policy makers, both within the EU and those of other emerging economies. The discussion of further EU enlargement towards the East with the accession of Turkey and other Commonwealth member states (CIS) has already started.

In what regards the first, it would be interesting in the ways that this new reality in the CEEC region might affect both developed and the peripheral countries like Greece and Portugal. Regarding the emerging

economies, it would be of interest to check the relative trends between the regions and countries as they also receive increasing interest from foreign investors.

Table 1. Inward and Outward FDI in selected CEECs (as percentage of GDP)

Country	2008		2009		2010	
	Outward FDI (%GDP)	Inward FDI (%GDP)	Outward FDI (%GDP)	Inward FDI (%GDP)	Outward FDI (%GDP)	Inward FDI (%GDP)
Bulgaria	1.46	19.02	-0.24	6.88	0.50	4.53
Croatia	2.05	8.91	1.96	4.62	-0.33	0.96
Czech Republic	2.00	2.99	0.50	1.54	0.89	3.53
Estonia	4.73	7.35	8.04	9.54	0.69	8.02
Hungary	2.00	4.75	2.10	1.59	1.19	1.84
Latvia	0.72	3.75	-0.24	0.36	0.07	1.46
Lithuania	0.71	4.32	0.59	0.47	0.35	1.73
Poland	0.83	2.80	1.21	3.18	1.00	2.07
Romania	0.14	6.81	-0.05	3.01	0.12	2.24
Slovakia	0.56	4.96	0.49	-0.06	0.38	0.60
Slovenia	2.54	3.56	0.34	-1.18	0.32	1.75
Grand Total	**1.41**	**6.42**	**1.19**	**3.21**	**0.58**	**3.22**

Source: UNCTAD, 2010 and authors' calculations

Table 2. Summary statistics of variables

	Variable	Before 1997					Between 1997 & 2002					After 2002				
		Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max
FDI Variables	INWARD FLOWS*	55	837.18	1331.51	10.00	5103.49	66	1924.85	2213.24	106.60	9343.00	66	3701.98	3569.91	179.18	13922.00
	AGRICULTURE*	55	7.94	14.37	10.00	78.83	66	17.41	41.83	106.60	177.92	66	58.64	126.11	179.18	604.63
	MANUFACTURING*	55	383.83	667.50	15.67	3601.16	66	756.95	1163.05	108.56	4787.89	66	1746.34	1304.94	206.76	3962.42
	SERVICES*	55	340.94	595.53	18.76	3372.28	66	1078.87	1729.62	197.32	8432.47	66	1897.74	1603.65	205.33	6895.38
IMPORT Variables	IMPORTS*	55	11878.26	9482.26	1548.54	44460.20	66	19061.25	16634.97	3432.33	65550.85	66	40864.09	34473.87	6307.17	145033.50
	AGRICULTURE*	55	259.09	216.27	11.89	982.20	66	311.19	267.73	49.92	1065.95	66	624.43	539.17	143.78	2528.71
	MANUFACTURING*	55	9632.98	7621.29	1240.00	37135.00	66	16015.17	14112.97	2720.00	55298.91	66	35228.76	29854.91	5234.09	124177.80
	SERVICES*	55	1986.19	1819.01	156.41	7138.00	66	2734.89	2307.88	662.41	9186.00	66	5010.91	4313.02	929.30	18327.00
Economic Variables	REAL GDP**	55	86.88	89.39	10.70	363.35	66	104.27	115.23	12.97	457.01	66	127.83	136.61	18.78	550.12
	GDP PER CAPITA	55	7397.75	2425.17	4514.40	13421.20	66	9991.89	3255.17	5122.90	18872.80	66	14313.65	4129.09	7271.50	24930.00
	REAL INTEREST	55	6.39	2.70	1.17	12.67	66	6.38	2.57	3.14	21.37	66	4.82	1.01	3.18	7.03
	ULC	55	51.65	16.81	6.66	84.82	66	64.33	11.44	39.63	88.95	66	95.93	10.93	66.73	117.60
Competitiveness and Human Capital Variables	PRIMARY EDU	55	6.32%	1.64%	4.50%	10.07%	66	6.61%	1.46%	5.00%	9.73%	66	7.06%	1.41%	5.44%	10.43%
	SECONDARY EDU	55	8.85%	1.48%	6.01%	11.93%	66	8.72%	0.87%	7.19%	10.25%	66	11.49%	9.56%	6.67%	44.18%
	R&D OVER GDP	55	0.74%	0.32%	0.31%	1.44%	66	0.78%	0.33%	0.37%	1.56%	66	0.81%	0.38%	0.28%	1.61%
	TECHNOLOGY	55	1.98	9.16	-0.28	66.50	66	0.34	0.35	0.00	1.70	66	0.27	0.21	0.03	0.76
	TRADE OVER GDP	55	23%	13%	4%	58%	66	33%	13%	13%	61%	66	57%	21%	25%	95%
	TRADE TAX REV	55	34.68%	8.86%	14.27%	54.74%	66	36.10%	5.78%	25.54%	48.41%	66	36.20%	5.47%	26.35%	49.37%
Institutional and Risk Variables	INVESTMENT PRO	55	7.05	2.34	3	10	66	9.24	1.31	7	12	66	9.54	1.66	6	12
	BUREAUCRACY	55	2.60	0.65	1	4	66	2.64	0.74	1	4	66	2.65	0.67	1	4
	CORRUPTION	55	3.81	0.86	2	5	66	3.39	0.85	2	5	66	3.02	0.68	2	4
	GOVERNMENT ST	55	7.52	1.69	5	10	66	9.09	0.98	7	11	66	8.01	1.17	5	11
	LAW & ORDER	55	4.96	0.65	4	6	66	4.57	0.58	4	6	66	4.49	0.46	4	5
	SOCIO CONDIT	55	5.56	0.81	4	8	66	5.12	1.55	1.33	7.50	66	5.72	1.08	4	8
	M&A SALES*	55	240.00	512.06	0.00	2333.40	66	900.53	1496.39	0.00	9316.00	66	1291.05	1971.47	0.00	11160.15

* Million US $, ** Billion US $

Table 3. Variables Description

Variable	Description	Source
FDI INFLOWS	Foreign Direct Investment Inflows, (Total, Constant 1995 International US $ mil)	The Vienna Institute for International Economic Studies, WIIW Database and UNCTAD
FDI AGRIC	Foreign Direct Investment Inflows in Agriculture, (Total, Constant 1995 International US $ mil)	The Vienna Institute for International Economic Studies, WIIW Database
FDI MANUF	Foreign Direct Investment Inflows in Manufacturing, (Total, Constant 1995 International US $ mil)	The Vienna Institute for International Economic Studies, WIIW Database
FDI SERVICES	Foreign Direct Investment Inflows in Services, (Total, Constant 1995 International US $ mil)	The Vienna Institute for International Economic Studies, WIIW Database
IMPORTS	Imports of goods and services, (BoP, Constant 1995 International US $ mil)	World Development Indicators, World Bank and European Bank for Reconstruction and Development
IMPORTS AGRIC	Imports of agricultural goods, (BoP, Constant 1995 International US $ mil)	World Development Indicators, World Bank and European Bank for Reconstruction and Development
IMPORTS MANUF	Imports of manufacturing goods, (BoP, Constant 1995 International US $ mil)	World Development Indicators, World Bank and European Bank for Reconstruction and Development
IMPORTS SERVICES	Imports of services, (BoP, Constant 1995 International US $ mil)	World Development Indicators, World Bank and European Bank for Reconstruction and Development
REAL GDP	GDP, PPP (Constant 1995 International US $ bn)	Economist Intelligence Unit, COMPUSTAT and Authors' Calculations
PRIMARY EDU	Number of Teachers over Number of Pupils enrolled in Primary education	World Development Indicators, World Bank and Authors' Calculations
SECONDARY EDU	Number of Teachers over Number of Pupils enrolled in Secondary education	World Development Indicators, World Bank and Authors' Calculations
REAL INTEREST	Real interest rate (%)	World Development Indicators, World Bank and International Financial Statistics
ULC	Unit Labour Cost Index (US $, 2005=100)	Economist Intelligence Unit and International Labour Office
TECHNOLOGY	Royalty and Licence Fees Receipts over Payments (BoP, Constant 1995 International US $)	World Development Indicators, World Bank and Authors' Calculations
R&D OVER GDP	Research and Development Expenditure over GDP	World Development Indicators, World Bank and Authors' Calculations
INVESTMENT PROFILE	Investment Profile (Contract viability/Expropriation, Profits Repatriation, Payment Delays). Takes values from 0 to 12 with higher values corresponding to a very low risk in the different categories	International Country Risk Guide Database
BUREAUCRACY	Bureaucratic Quality. Takes values from 0 to 4 with higher values corresponding to a better bureaucratic quality of the governmental system.	International Country Risk Guide Database
CORRUPTION	Corruption. Takes values from 0 to 6 with higher values corresponding to higher corruption within the political system.	International Country Risk Guide Database
GOVERNMENT STAB	Government Stability (Government Unity, Legislative Strength, Popular Support). Takes values from 0 to 12 with higher values corresponding to higher government stability.	International Country Risk Guide Database
LAW & ORDER	Law and Order (Judicial system, Crime rate). Takes values from 0 to 6 with higher values corresponding to better judicial systems and lower criminal rates.	International Country Risk Guide Database
M&A SALES	Merger & Acquisition Sales in the host economy. (Total, Constant 1995 International US $ mil)	UNCTAD, COMPUSTAT and Authors' Calculations
BALTIC	Dummy=1 if country is Estonia and Latvia (Lithuania, though a Baltic country, is excluded due to its poor relationship with Russia)	Authors' Dummy
METH	Dummy=1 if country is Estonia and Hungary – following direct sales to strategic owners as a privatization method	Authors' Dummy from European Banks for Reconstruction and Development
ENLARG	Dummy=1 if year>=1995 onwards - reaffirmation of the Madrid European Council about EU's enlargement	Authors' Dummy
WAVE1	Dummy=1 if country is Czech Republic, Estonia, Hungary, Poland and Slovenia & year >=1997 – Agenda 2000 announcement identifying two groups of countries (wave1 and wave2 countries)	Authors' Dummy from European Banks for Reconstruction and Development
GDP PER CAPITA	GDP per capita, PPP (Constant 1995 International US $)	World Development Indicators, World Bank
TRADE OVER GDP	Trade (% of GDP)	World Development Indicators, World Bank and European bank for Reconstruction and Development
TRADE TAX REV	Taxes on International Trade (% of current revenue)	World Development Indicators, World Bank
SOCIO CONDITIONS	Socioeconomic Conditions (Unemployment, Consumer Confidence, Poverty). Takes values from 0 to 12 with higher values corresponding to better social conditions.	International Country Risk Guide Database

Table 4. Model estimation, 3SLS, Endogenous Variables: FDI INFLOWS and IMPORTS

	one	two	three	four	five	six	seven	eight	nine
FDI INFLOWS									
IMPORTS	0.753***	0.760***	1.162***	1.150***	0.929***	0.956***	0.929***	0.894***	0.972***
	(0.132)	(0.137)	(0.143)	(0.156)	(0.157)	(0.139)	(0.153)	(0.168)	(0.152)
REAL GDP	0.003***	0.003***	0.003**	0.003**	0.003**	0.003**	0.003**	0.003**	0.003**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
PRIMARY EDUC	-0.296	-0.698	2.849	-4.184	-0.693	-1.184	-6.619	-0.505	-0.490
	(5.031)	(4.987)	(4.470)	(5.410)	(5.107)	(4.820)	(5.502)	(5.151)	(5.100)
SECONDARY EDUC	2.181*	2.037	2.761**	2.836**	2.894***	3.286***	1.934*	2.648**	3.065***
	(1.250)	(1.242)	(1.102)	(1.099)	(1.037)	(1.070)	(1.062)	(1.046)	(1.080)
REAL INTEREST	-0.026	-0.026	-0.006	-0.012	-0.018	-0.006	-0.037	-0.018	-0.012
	(0.032)	(0.032)	(0.028)	(0.029)	(0.027)	(0.024)	(0.028)	(0.027)	(0.027)
ULC	-0.003**	-0.003**	-0.001	-0.003**	-0.003**	-0.003**	-0.006***	-0.003**	-0.004***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)
TECHNOLOGY		-0.001							
		(0.012)							
R&D OVER GDP			-1.045***	-1.195***	-1.189***	-1.292***	-1.031***	-1.136***	-1.098***
			(0.210)	(0.225)	(0.210)	(0.197)	(0.221)	(0.219)	(0.232)
INVESTMENT PROF				0.050	0.063	0.067	0.061	0.054	0.076
				(0.052)	(0.050)	(0.046)	(0.048)	(0.050)	(0.052)
BUREAUCRACY				0.132	0.116	0.118	0.052	0.117	0.112
				(0.130)	(0.122)	(0.113)	(0.122)	(0.122)	(0.121)
CORRUPTION				-0.047	-0.053	-0.043	-0.036	-0.061	-0.080
				(0.097)	(0.091)	(0.084)	(0.097)	(0.091)	(0.095)
GOVERNMENT STAB				0.052	0.041	0.030	0.043	0.058	0.036
				(0.055)	(0.051)	(0.046)	(0.050)	(0.055)	(0.051)
LAW & ORDER				0.143	0.171	0.184*	0.240**	0.166	0.154
				(0.124)	(0.116)	(0.110)	(0.119)	(0.116)	(0.116)
M&A SALES					0.020***	0.025***	0.027***	0.032***	0.034***
					(0.005)	(0.007)	(0.008)	(0.006)	(0.008)
BALTIC						-0.527***			
						(0.202)			
METH							0.480**		
							(0.224)		
ENLARGEMENT								0.191	
								(0.257)	
WAVE1									-0.172
									(0.193)
CONSTANT	-0.471	-0.480	-3.643***	-4.072**	-2.662*	-2.907**	-2.124	-2.335	-3.303**
	(1.260)	(1.301)	(1.252)	(1.614)	(1.575)	(1.337)	(1.589)	(1.634)	(1.622)
LIMPORTS									
LFDI INFLOWS	0.330**	0.348**	0.168*	0.228***	0.203***	0.353***	0.241***	0.227***	0.222***
	(0.138)	(0.137)	(0.097)	(0.073)	(0.057)	(0.050)	(0.053)	(0.055)	(0.055)
REAL GDP	0.003***	0.003**	0.004***	0.004***	0.004***	0.003***	0.004***	0.004***	0.004***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
GDP PER CAPITA	0.010***	0.012***	0.0013***	0.012***	0.0014***	0.012***	0.014***	0.013***	0.012***
	(0.004)	(0.005)	(0.005)	(0.004)	(0.004)	(0.005)	(0.005)	(0.004)	(0.003)
TRADE OVER GDP	-0.001	-0.001	0.001	0.001	0.002	-0.001	-0.002	0.001	0.002
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)
TRADE TAX REV	-0.017***	-0.017***	-0.019***	-0.018***	-0.019***	-0.013***	-0.018***	-0.019***	-0.018***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
SOCIO CONDITIONS				0.043	0.038	0.019	0.035	0.035	0.037
				(0.031)	(0.030)	(0.027)	(0.028)	(0.029)	(0.029)
CONSTANT	6.587***	6.501***	7.421***	7.253***	7.410***	6.420***	7.193***	7.274***	7.294***
	(0.711)	(0.708)	(0.539)	(0.498)	(0.423)	(0.376)	(0.400)	(0.414)	(0.413)
N	187	187	187	187	187	187	187	187	187
F Equation 1	36.97***	30.96***	46.22***	30.46***	36.64***	36.72***	35.60***	34.18***	34.69***
F Equation 2	199.02***	194.72***	178.88***	161.82***	160.12***	170.96***	166.86***	164.90***	163.80***
Akaike Info Criterion	419.677	411.928	416.378	396.669	391.870	330.733	377.772	389.059	384.795
Hansen/Sargan	3.59	3.88	2.70	4.84	4.53	8.39	5.01	5.21	4.92

Standard errors in parentheses   *** Significant at 1%, ** Significant at 5%, *Significant at 10%

Table 5. Model estimation, 3SLS, Endogenous Variables: FDI INFLOWS and IMPORTS, Different Time Periods of Transition

	Before 1997	Between 1997 and 2002	After 2002
FDI INFLOWS			
IMPORTS	1.445***	0.502	1.138***
	(0.402)	(0.325)	(0.350)
REAL GDP	-0.003	0.001	0.002
	(0.002)	(0.001)	(0.002)
PRIMARY EDUC	-3.137	-2.634	-27.709***
	(10.500)	(7.030)	(7.477)
SECONDARY EDUC	25.940**	-0.397	37.645***
	(11.965)	(1.141)	(9.670)
REAL INTEREST	-0.023	-0.067	-0.120
	(0.032)	(0.054)	(0.096)
ULC	-0.010***	-0.014**	-0.015**
	(0.003)	(0.009)	(0.006)
R&D OVER GDP	-2.033***	0.187	-0.628**
	(0.563)	(0.260)	(0.262)
INVESTMENT PROF	0.027	0.141	0.050
	(0.124)	(0.094)	(0.060)
BUREAUCRACY	-0.150	-0.093	-0.129
	(0.221)	(0.187)	(0.166)
CORRUPTION	0.078	0.039	-0.099
	(0.206)	(0.266)	(0.123)
GOVERNMENT STAB	0.186	0.269***	0.103
	(0.123)	(0.077)	(0.107)
LAW & ORDER	0.002	0.314**	0.083
	(0.216)	(0.012)	(0.153)
M&A SALES	0.026	0.025***	0.022**
	(0.022)	(0.008)	(0.007)
CONSTANT	-9.446***	7.397*	-3.106
	(3.230)	(3.754)	(2.857)
IMPORTS			
FDI INFLOWS	0.062	0.431***	0.397***
	(0.057)	(0.085)	(0.056)
REAL GDP	0.004***	0.003***	0.002***
	(0.001)	(0.001)	(0.001)
GDP PER CAPITA	0.002***	0.002***	0.003***
	(0.001)	(0.001)	(0.001)
TRADE OVER GDP	-0.006**	-0.001	-0.001
	(0.003)	(0.003)	(0.002)
TRADE TAX REV	-0.014*	-0.007	-0.027***
	(0.008)	(0.009)	(0.007)
SOCIO CONDITIONS	0.073	0.022	0.044
	(0.054)	(0.057)	(0.029)
CONSTANT	8.211***	5.677***	6.560***
	(0.520)	(0.826)	(0.455)
N	55	66	66
F Equation 1	27.05***	20.10***	20.88***
F Equation 2	116.58***	50.87***	61.28***
Akaike Info Criterion	113.830	122.850	58.262
Hansen/Sargan	3.79	3.96	4.08

Standard errors in parentheses   *** Significant at 1%, ** Significant at 5%, *Significant at 10%

Table 6. Model estimation, 3SLS, Endogenous Variables: FDI INFLOWS and IMPORTS, Different Time Periods of Transition & Different Industrial Sectors

	Total	Before 1997	Between 1997 and 2002	After 2002
FDI INFLOWS				
IMP AGRIC	-0.191	1.186**	-1.357***	0.025
	(0.270)	(0.557)	(0.326)	(0.284)
IMP MANUF	3.265***	5.388***	-2.027**	-4.151**
	(0.940)	(1.697)	(0.984)	(1.752)
IMP SERVICES	1.250***	0.971***	0.556**	1.354***
	(0.166)	(0.331)	(0.218)	(0.202)
REAL GDP	0.004***	0.006***	0.005***	0.006***
	(0.001)	(0.002)	(0.001)	(0.001)
PRIMARY EDUC	-6.143	4.400	-6.908	-16.390***
	(5.421)	(10.607)	(7.875)	(5.299)
SECONDARY EDUC	2.468**	19.792*	34.665***	4.341***
	(1.079)	(10.191)	(9.063)	(0.909)
REAL INTEREST	-0.004	-0.036	-0.071	-0.074*
	(0.028)	(0.026)	(0.091)	(0.042)
ULC	-0.007*	-0.012*	-0.007***	-0.006
	(0.004)	(0.007)	(0.002)	(0.008)
R&D OVER GDP	-1.380***	-2.147***	-0.078	-1.408***
	(0.289)	(0.735)	(0.287)	(0.278)
INVESTMENT PROF	0.009	0.457***	0.128***	0.011
	(0.048)	(0.153)	(0.045)	(0.090)
BUREAUCRACY	0.257	0.047	0.049	0.785***
	(0.204)	(0.308)	(0.215)	(0.242)
CORRUPTION	-0.110	-0.495**	-0.283***	-0.133
	(0.101)	(0.202)	(0.100)	(0.200)
GOVERNMENT STAB	0.088	0.419***	0.230***	0.181***
	(0.055)	(0.146)	(0.084)	(0.061)
LAW & ORDER	0.106	0.461*	0.127	0.144
	(0.129)	(0.245)	(0.125)	(0.207)
M&A SALES	0.023***	0.022*	0.022	0.025***
	(0.005)	(0.006)	(0.019)	(0.007)
CONSTANT	-30.888***	-34.024***	2.915	-3.578
	(4.708)	(7.688)	(5.620)	(6.857)
IMPORTS				
FDI AGRIC	0.116***	0.188***	0.078**	0.127***
	(0.027)	(0.053)	(0.037)	(0.041)
FDI MANUF	0.211***	0.031	0.192***	0.255***
	(0.043)	(0.099)	(0.044)	(0.069)
FDI SERVICES	-0.122**	-0.238**	-0.081***	-0.134**
	(0.053)	(0.087)	(0.031)	(0.006)
REAL GDP	0.004***	0.005***	0.004***	0.004***
	(0.001)	(0.001)	(0.001)	(0.001)
GDP PER CAPITA	0.010***	0.012***	0.016***	0.015***
	(0.002)	(0.001)	(0.004)	(0.003)
TRADE OVER GDP	-0.001	-0.006*	0.003*	0.005
	(0.001)	(0.003)	(0.002)	(0.003)
TRADE TAX REV	-0.012**	-0.014***	-0.010***	-0.005
	(0.006)	(0.002)	(0.003)	(0.013)
SOCIO CONDITIONS	0.043	0.095	0.072**	0.052
	(0.028)	(0.057)	(0.030)	(0.060)
CONSTANT	7.540***	9.120***	6.826***	6.586***
	(0.440)	(0.687)	(0.599)	(1.129)
N	187	55	66	66
F Equation 1	39.60***	37.55***	53.74***	38.13***
F Equation 2	118.80***	36.13***	119.02***	38.45***
Akaike Info Criterion	224.297	55.935	14.683	59.101
Hansen/Sargan	11.01	4.14	3.44	3.80

Standard errors in parentheses   *** Significant at 1%, ** Significant at 5%, *Significant at 10%

References

Aberg, P., 2001. Japanese exports and foreign direct investment. In L.P.H. Poon and E. Thompson (Eds), Asia Pacific Transitions, London: Macmillan, pp. 355-378.

Aizenman, J. and Noy, I., 2005. FDI and trade – Two way linkages?, NBER Working Paper No. 11403.

Allen and Overy Report, 2006. Foreign direct investment in Central and Eastern Europe, Allen and Overy Bratislava Office.

Altomonte C. and Guagliano C., 2001. Competing locations? Market potential and FDI in Central and Eastern Europe vs. the Mediterranean, Discussion Paper No. 108, LICOS, Centre for Transition Economies.

Barrell, R. and Pain, N., 1999. Trade restraints and Japanese direct investment flows, European Economic Review 43, 29-45.

Belberdos, R. and Sleuwagen, L., 1998. Tariff jumping DFI and export substitution: Japanese electronics firms Europe, Journal of Industrial Organization 16(5), 601-638.

Bellos, S. and Subasat, T. (2012). Governance and foreign direct investment, International Review of Applied Economics, 26(3), 303-328.

Bevan, A.A. and Estrin, S., 2000. The determinants of foreign direct investment in transition economies, Centre for Economic Policy Research Discussion Paper DP2638, William Davidson Institute Working Paper No.342, University of Michigan, and Centre for New and Emerging Markets Discussion Paper No. 9, London Business School.

Bevan, A.A., Estrin, S. and Grabbe, H., 2001. The impact of EU accession prospects on FDI inflows to central and eastern Europe, ESRC *'One Europe or Several'* Programme Policy Paper 06/01, Sussex European Institute, University of Sussex.

Boeri, T. and Brücker, H. *et al.*, 2000. The Impact of Eastern Enlargement on Employment and Labour Markets in the EU Member States, Report for European Commission's employment and social affairs directorate, European Integration Consortium (DIW, CEPR, FIEF, IAS, IGIER), Berlin/Milan, Germany/Italy.

Brainard, S.L., 1993. A simple theory of Multinational Corporations and trade with a trade-off between proximity and concentration, NBER Working Paper 4269.

Brainard, S.L., 1997. An empirical assessment of the proximity-concentration trade-off between multinational sales and trade, American Economic Review 87, 520-544.

Brenton, P., Di Mauro, F. and Lücke, M., 1999. Economic integration and FDI: an empirical analysis of foreign investment in the EU and in Central and Eastern Europe, Empirica 26(2), 95-121.

Breuss, F., Egger, P. and Pfaffermayar M., 2001. The impact of agenda 2000's structural policy reform on FDI in the EU, Journal of Policy Modelling 23(7), 807-820.

Buckley, P. and Casson, M., 1981. The optimal timing of a foreign direct investment, The Economics Journal 91(361), pp. 75-87.

Carr, D.L., Markusen, J. and Maskus, K.E., 1998. Estimating the knowledge-capital model of the Multinational Enterprise, NBER Working Paper No. 6773.

Carstensen, K. and Toubal, F., 2004. Foreign direct investment in Central and Eastern European countries: a dynamic panel analysis, Journal of Comparative Economics 32, 3-22.

Clausing, K., 2000. Does multinational activity displace trade?, Economic Inquiry 38(2), 190-205.

Clegg, J. , 1996. The United Kingdom : a par excellence two –way direct investor. In Dunning, J and Narula, R. (eds) Foreign direct investment and governments : catalysts for economic restructuring, Routledge : London.

Dasgupta, S. Mody, A. and Sinha, S., 1996. Japanese Multinationals in Asia, Policy Research Working Paper No. 1634, World Bank, Washington D.C.

Davidson, R., and J. G. MacKinnon. 1993. Estimation and Inference in Econometrics. 2nd ed. New York: Oxford University Press.

Daude, C. and Stein, E., 2007. The quality of institutions and foreign direct investment, Economics & Politics, vol. 19, 317-344.

Dhrymes, P.H. 1969. Alternative Asymptotic Tests of Significance and Related Aspects of 2SLS and 3SLS Estimated Parameter *The Review of Economic Studies*, 36(2), 213-226.

Dunning, J., 1986. The investment development path revisited, Weltwirtshaftliches Archiv 112(4), 30-64.

Dunning, J. and Narula, R., 1997. 'The investment development path revisited. Some emerging issues. In Dunning, J. and Narula, R. (eds.) Foreign Direct Investment and Governments, Catalysts for Economic Restructuring.

Dunning, J., 1981. Explaining the international position of countries towards a dynamic or developmental approach, Weltwirtshaftliches Archiv 117, 30-64.

Dunning, J., 1988. Explaining International Production. London: Unwin Hyman.

Dunning, J., 1993. Multinational Enterprises and the Global Economy, New York: Addison Wesley.

Dunning, J., 2003.'Location and the multinational enterprise: a neglected factor? In Brewer, T, Young, S. and Guisinger, S. (eds). The New Economic Analysis of Multinationals: An Agenda for Management, Policy and Research, Cheltenham: UK, pp.45-69.

Dunning, J., Kim, C-S and Lin, J-D., 2001. Incorporating trade into the investment development path: a case study of Korea and Taiwan, Oxford Development Studies 29(2), 145-154.

Ebbers, H. and Todeva, E., 1999. Exploring the links between foreign direct investment, privatization policies, and transition reforms in central and eastern Europe, European international Business Academy, 25th Annual conference 'International Business and the Global Services Economy' Manchester.

Egger, P. and Stehrer, R., 2003.'International outsourcing and the skill-specific wage bill in Eastern Europe, The World Economy 26(1), 61-72.

Ernst & Young's European attractiveness survey,June 2010

Fontagne, L., 1999. Foreign direct investment and international trade: complements or substitutes?, OECD Science, Technology and Industry Working Papers, 1999/3, OECD Publishing.

Forte, R., 2004. The relationship between foreign direct investment and international trade − Substitution or complementarity? A survey, Research Centre on Industrial, Labour and Managerial Economics, Department of Economics, University of Porto.

Goldberg, S. and Klein, W., 1998. Foreign direct investment, trade and real exchange rate linkage in developing countries. In Reuven Glick (ed.) Managing Capital Flows and Exchange Rates: Perspectives from the Pacific Basin, Cambridge University Press, 73-100.

Graham, E. M., 1999. Foreign direct investment outflows and manufacturing trade: a comparison of Japan and the United States. In D.J. Encarnation (ed.) Japanese Manufacturing in Asia-Regional Operation in Comparative Perspective, Oxford, Oxford University Press, 87-99.

Grosse, R. and Trevino, L.J., 2005. New institutional economics and FDI location in Central and Eastern Europe, Management International Review 45(2), 123-145.

Hall, A. R., and F. P. M. Peixe. 2003. A Consistent Method for the Selection of Relevant Instruments. Econometric Reviews 22(5), 269–287.

Hall, A. R., G. D. Rudebusch, and D. W. Wilcox. 1996. Judging instrument relevance in instrumental variables estimation. International Economic Review 37(2), 283–298.

Hardy, J., 1994. Eastern promise? Foreign investment in Poland, European Business Review 94(5), 28-37.

Helpman, E., 1984. A simple theory of international trade with multinational Corporations, Journal of Political Economy 92, 451-471.

Holland, D. and Pain, N., 1998. The diffusion of innovations in Central and Eastern Europe: a study of the determinants and impact of foreign direct investment', NIESR Discussion Paper 137, National Institute of social and Economic research, London.

Horst, T., 1972. The industrial composition of US exports and subsidiary sales to the Canadian market, The American Economic Review 62(1/2) 37-45.

Horstmann, I. And Markusen, J., 1992. Endogenous market structures in international trade (Natura Facit Saltum), Journal of International Economics 29, 109-121.

Hunya, G., 2002.'FDI in South-Eastern Europe in the early 2000s, The Vienna Institute for International Economic Studies (WIIW), Vienna.

Hymer, S., 1976. The International Operations of National Firms: A Study of Direct Investment, Cambridge, MA: MIT Press.

Im, K.S., Pesaran, H.M., and Shin, Y., 1997. Testing for unit roots in heterogeneous panels. Discussion Paper, University of Cambridge.

Jadhav, P., 2012. Determinants of foreign direct investment in BRICS economies: analysis of economic, institutional and political factors, Procedia - Social and Behavioral Sciences 37, 5-14.

Jun, K.W. and Singh, H., 1996. The determinants of foreign direct investment: new empirical evidence, Transnational corporations 5, 67-106.

Kojima, K., 1978. Direct foreign investment: Japanese versus American model, in K. Kojima (ed.) Direct Foreign Investment: A Japanese Model of Multinational Business Operations, New York: Praeger Publishers, pp. 83-102.

Kojima, K., 1991. A Pacific economic community in a new international order, Singapore Economic Review 36(2),1-12.

Lankes, H.P. and Venables, A.J., 1996. Foreign direct investment in economic transition: the changing pattern of investments, Economics of Transition 4, 331-347.

Lansbury, M., Pain, N. and Smidkova, K., 1996. Foreign direct investment in Central Europe since 1990; an econometric study, National Institute Economic Review, 156, 104-113.

Linder, S.B., 1961. An Essay on Trade and Transformation, Wiley, New York.

Lipsey, R. and Weiss, M., 1981. Foreign production and exports in manufacturing industries, The Review of Economics and Statistics 63 (4), 488-494.

Lipsey, R. and Weiss, M.Y., 1984. Foreign production and exports of individual firms, Review of Economics and Statistics 66(2), 304-308.

Lipsey, R., Ramstetter, E. and Blomstrom, M., 2000. Outward FDI and home country exports: Japan, the United States, and Sweden, SSE/EFI Working Paper Series in Economics and Finance No. 369.

Lucas, R., 1993. On the determinants of direct foreign investment: evidence from east and southeast Asia, World Development, 21(3), 391-406.

Markusen, J., 1995. The boundaries of Multinational Enterprises and the theory of international trade, Journal of Economic Perspectives 9(2), pp. 169-189.

Markusen, J., 1998. Multinational firms and the new trade theory, Journal of International Economics 14, 341-356.

Meredith, L. and Maki, D., 1992. The United States export and foreign direct investment linkage in Canadian manufacturing industries, Journal of International Business Studies 24, 73-88.

Meyer, K., 1998. Direct Investments in Economies in Transition, Edward Elgar.

Meyer, K., 2001. Institutions, transaction costs, and entry mode choice in Eastern Europe, Journal of International Business Studies 32(2), 357-367.

Narula, R. and Dunning, J., 2000. Industrial development, globalisation and multinational enterprises: New realities for developing countries, Oxford Development Studies 28(2), 141-167.

Narula, R. and Wakelin, K., 1998. Technological competitiveness, trade and foreign direct investment, Structural Change and Economic Dynamics 9, 373-387.

Nicolini, R., 1998. Exportation and Foreign Direct Investment in Visegrad Area: an empirical analysis, International Review of Economics and Business 45, 563-581.

Noorbakhsh, F. and Paloni, A. (2001). Human capital and FDI inflows to developing countries: new empirical evidence, World Development, 29(9), 1593-1610.

Pain, N. and Wakelin, K., 1998. Export performance and the role of foreign direct investment, NIESR Discussion Paper 131.

Pantulu, J. and Poon, J.P.H., 2003. Foreign direct investment and international trade: evidence from the US and Japan, Journal of Economic Geography 3, 241-259.

Papanastassiou, M. and Pearce, R. D., 1991/1992. Host-country determinants of UK FDI and exports: an analysis of developed and developing countries, Discussion Paper Series B, No.158, Department of Economics, University of Reading.

Pavitt, K., 1984. Sectoral patterns of technical change : towards a taxonomy and a theory, Research Policy 13, 343-373.

Pontes, J.P., 2004. A theory of the relationship between foreign direct investment and trade, Economics Bulletin 6(2), 1-8.

Resmini, L., 2000. The determinants of foreign direct investment in the CEECs – New evidence from sectoral patterns, Economics of Transition 8(3), 665-689.

Rojec, M. and Jaklic, A., 2002. Integration of Slovenia into EU and global industrial networks: review of existing evidence, Working Paper No. 14, Centre for the Study of Economic and Social Change in Europe, School of Slavonic & East European Studies, University College London.

Sachs, J.D. and Shatz, H.D., 1994. Trade and jobs in US manufacturing, Brookings Papers on Economic Activity 1, 1-69.

Sargan, J. 1988. Testing for misspecification after estimation using instrumental variables. In Contributions to econometrics: John Denis Sargan, ed. E. Maasoumi, vol. 1. Cambridge University Press.

Schmieding, H. 1993. From plan to market: on the nature of the transformation crisis, Weltwirtschaftliches Archiv 129, 216-253.

Schwab, K., and Porter, M. 2008. The Global Competitiveness Report 2008-2009. *The Global Competitiveness Report.* Geneva, Switzerland: World Economic Forum

Svetlicic, M. and Jaklic, A., 2002. Outward FDI by selected Transition Economies; comparative evaluation, Competitive Paper, European International Business Academy (EIBA) 2002, Athens, Greece.

Swedenborg, B., 1979. The Multinational Operations of Swedish Firms, Almqvist & Wicksell International, Stockholm.

Swedenborg, B., 1982. Svensk industri i utlandet. En analys av drivkrafter och effekter, The Industrial Institute for Economic and Social Research, Stockholm.

Swensson, D. L., 2004. Foreign investment and the mediation of trade flows, Review of International Economics 12(4), 609-629.

Venables, A., J., 1999. Fragmentation and multinational production, European Economic Review 43, 935-945.

Weise, C., Bachtler, J., Downes, R., McMaster, I. And Toepel, K., 2001. The Impact of EU Enlargement on Cohesion, Final Report, European Commission Tender No. PO/00-1/RegioA4, DIW German Institute for Economic Research and European Policies Research Center, Berlin and Glasgow.

Wilamoski, P. and Tinkler, S., 1999. The trade balance effects of US foreign direct investment in Mexico, Atlantic Economic Journal 27(1), 24-40.

Zellner, A. and Theil, H., 1962. Three stage least squares: simultaneous estimation of simultaneous equations, Econometrica 30, 63-68

Zhang, K. and Markusen, J., 1999. Vertical multinationals and host-country characteristics, Journal of Development Economics 59(2), 233-252

Appendix. Correlation Table

	lfdiin	limp	lfdiagric	lfdimanuf	lfdiserv	limpagric	limpmanuf	limpserv	rgdpppp	primar_int~s	secon_intens	reffintr	ulc	rdgdp	invprof	burqua	corruption	gov_stab	lao	masales	gdppcppp	tradegdp	taxtrade	soccon
lfdiin	1																							
limp	0.8314*	1																						
lfdiagric	0.6999*	0.5212*	1																					
lfdimanuf	0.8155*	0.7771*	0.6366*	1																				
lfdiserv	0.8123*	0.6677*	0.7482*	0.8074*	1																			
limpagric	-0.4255*	-0.3510*	-0.5014*	-0.3494*	-0.2936*	1																		
limpmanuf	0.5602*	0.5686*	0.4047*	0.5932*	0.5487*	-0.2675*	1																	
limpserv	0.8068*	0.9522*	0.5432*	0.7674*	0.6705*	-0.3591*	0.5332*	1																
rgdpppp	0.6070*	0.7028*	0.3784*	0.5661*	0.5390*	-0.1968*	0.2851*	0.7148*	1															
primar_int~s	0.4066*	0.4127*	0.1485	0.3856*	0.3732*	0.1601*	0.3504*	0.4248*	0.4339*	1														
secon_intens	0.094	-0.035	0.115	0.0116	0.1112	0.1968*	0.0864	-0.0113	-0.1214	0.2478*	1													
reffintr	-0.2387*	-0.3423*	-0.0337	-0.1736*	-0.0966	0.1780*	-0.0985	-0.3725*	-0.3165*	-0.3229*	-0.0031	1												
ulc	-0.0792	-0.2020*	-0.1446	-0.1362	-0.1568	0.0356	0.0259	-0.2403*	-0.1186	-0.0497	0.1029	0.0573	1											
rdgdp	0.025	0.2999*	-0.1001	0.1599*	0.1313	0.2204*	0.3519*	0.3189*	-0.0759	0.0961	0.0455	-0.0381	-0.0855	1										
invprof	0.1188	0.0832	0.0249	0.1824*	0.1852*	-0.1	0.3637*	-0.0006	-0.0618	0.1549*	0.0348	0.0003	0.2404*	0.1132	1									
burqua	0.2460*	0.3322*	0.2562*	0.3809*	0.2679*	0.1026	0.4955*	0.3760*	0.137	0.4982*	0.0435	-0.0894	-0.0107	0.4680*	0.2608*	1								
corruption	0.1121	0.1502	-0.0019	0.1795*	0.1198	0.2605*	0.0596	0.2239*	0.1810*	0.3299*	0.0658	-0.0433	-0.1463	0.133	-0.5342*	0.3406*	1							
gov_stab	-0.1740*	-0.2076*	-0.2024*	-0.1065	-0.0316	0.0131	0.2239*	-0.2672*	-0.2709*	0.0261	-0.0383	0.0767	0.0094	0.1318	0.5310*	0.0219	-0.2264*	1						
lao	0.0895	0.1857*	0.0622	0.1398	0.0234	0.0153	0.1572*	0.2644*	0.1149	0.1004	-0.1143	-0.0971	-0.2170*	0.3180*	-0.4482*	0.3461*	0.4550*	-0.2028*	1					
masales	0.5837*	0.5285*	0.3972*	0.5104*	0.5362*	-0.2703*	0.2627*	0.5082*	0.4862*	0.1867*	-0.0132	-0.1354	-0.0544	0.0645	0.0613	0.1176	0.0354	-0.1491	0.0126	1				
gdppcppp	0.3981*	0.5759*	0.1794*	0.4137*	0.3723*	0.074	0.5217*	0.4907*	0.0762	0.3341*	0.1868*	-0.1602*	-0.0445	0.6754*	0.3809*	0.5125*	-0.0006	0.107	0.0586	0.2561*	1			
tradegdp	-0.0471	-0.0741	-0.0069	0.0327	0.0482	-0.0053	0.2191*	-0.1357	-0.4969*	-0.1158	0.2767*	0.1781*	0.1704*	0.2076*	0.3996*	0.3469*	-0.0507	0.1566*	-0.2240*	-0.049	0.4496*	1		
taxtrade	-0.2393*	-0.4172*	0.0825	-0.2976*	-0.1079	0.0489	-0.1496	-0.4276*	-0.2936*	-0.1707*	0.0041	0.1618*	0.2077*	-0.2004*	0.2905*	-0.1022	-0.3959*	0.3407*	-0.3636*	-0.1660*	-0.1618*	0.114	1	
soccon	0.0475	0.1855*	0.024	0.1331	0.0812	0.3277*	0.3258*	0.1117	-0.0056	0.1980*	0.1795*	0.1547	0.1838*	0.3621*	0.2556*	0.4715*	0.0557	-0.1231	0.0791	0.0403	0.5006*	0.3388*	-0.0974	1

* Significant at 5%