

Attinasi, Maria Grazia; Melloni, Nicola; Soci, Anna

**Working Paper**

## Institutional change and FDI in three selected CEECs: The Czech Republic, Hungary and Poland

Quaderni - Working Paper DSE, No. 576

**Provided in Cooperation with:**

University of Bologna, Department of Economics

*Suggested Citation:* Attinasi, Maria Grazia; Melloni, Nicola; Soci, Anna (2006) : Institutional change and FDI in three selected CEECs: The Czech Republic, Hungary and Poland, Quaderni - Working Paper DSE, No. 576, Alma Mater Studiorum - Università di Bologna, Dipartimento di Scienze Economiche (DSE), Bologna,  
<https://doi.org/10.6092/unibo/amsacta/4709>

This Version is available at:

<https://hdl.handle.net/10419/159417>

**Standard-Nutzungsbedingungen:**

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

**Terms of use:**

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*



<https://creativecommons.org/licenses/by/3.0/>

**Maria Grazia Attinasi (\*) - Nicola Melloni (\*\*) - Anna Soci (\*\*\*)**

**Institutional change and FDI in three selected CEECs:  
The Czech Republic, Hungary and Poland**

**Abstract**

The European enlargement provides new space for re-organizing the production and re-locating the plants. Few studies approach the complex theme of industrial location in the EU new-comers: statistics are still scarce, language constitutes a barrier for assuming reliable information, and the differences in the economic and institutional structure bring further difficulties.

This paper aims at investigating the relation between institutional change in this area and FDI. In particular, the focus will be on the privatisation process, which has played a major role in determining the behaviour of the firms and thus the direction of the FDI.

**JEL: F210, F150, F210**

**FDI, Enlargement, Institutions, Privatisation**

---

(\*) Asian Development Bank

(\*\*) University of Oxford

(\*\*\*) University of Bologna

**Phone: 0044 (0)7817900163**

**e-mail: nicola.melloni@qeh.ox.ac.uk**

## 1. Introduction \*

The transition process and the European enlargement have been providing footloose MNEs with new space to re-organise their production and to re-locate the plants. Few studies approach the complex theme of industrial location in the EU new-comers: statistics are still scarce, language constitutes a barrier for assuming reliable information, and the differences in the economic and institutional structure bring further difficulties. On the contrary, research on FDI since their remarkable surge on early '80s has been gaining increasing space in the literature.<sup>1</sup>

This paper aims at investigating the relation between FDI and institutional change in three selected countries of the CEECs, namely: the Czech Republic, Hungary, and Poland with a quantitative focus on the socio-political characteristics of these countries. Further to the privatisation process, which has played a major role in determining the direction of FDIs, the socio and economic characteristics of a country are likely to affect the behaviour of the firms thus making their presence less volatile. Therefore, the main thesis of this paper is that the reform process<sup>2</sup> mitigates the risk of investment and encourages investors to undertake long run position in an economy. A suitable environment encompasses other factors over and beyond macroeconomic stability and the non-discriminatory treatment of FDI, which have already been highly accomplished in many CEECs countries. Substantial absence of bureaucratic interference, the presence of fair and certain rules, and the existence of the market and supportive financial institutions<sup>3</sup> are additional factors that come into consideration in the location decision of a firm. Moreover, in transition countries the existence of a sound political climate and the possibility of connections with ruling elites, which increase the opportunities for special concessions in the privatisation process, are as important factors as technical and managerial know-how, geographical location, and proximity to transport hubs are elsewhere.

---

\* A preliminary and incomplete version of this paper was presented at the IV Annual Conference of the European Economics and Finance Society in Coimbra, May 2005. The authors thank the participants in the session "....." for precious comments and suggestions. The usual disclaimers apply. The present version was accepted at the V Annual Conference of the EUNIP in Limerick, 2006.

<sup>1</sup> See Soci [2006] *forthcoming*

<sup>2</sup> The reform process we intend in this paper is both the economic and political one. In particular, as far as the economic reforms are concerned we focus on the process of privatisation (as long as stabilisation and liberalisation were mostly achieved in the first years of reforms) and of establishing the rule of law. Political reforms include the process of democratic stabilisation, and, in this case, of EU accession.

<sup>3</sup> As an example of the relevance of these aspects for economics, see Giavazzi and Tabellini [2004]

The relative homogeneity of the Czech Republic, Hungary and Poland in terms of their institutional harmonisation process may help in better disentangling the role that socio economic characteristics play in affecting the behaviour of firms, and this justifies the paper's exclusive focus on these three countries.. Nonetheless some differences hold in what concerns each country's specific approach to the privatisation process.<sup>4</sup>

The remaining of the paper is organised as follows: section 1 surveys very briefly the empirical literature; section 2 presents the data and provides the theoretical framework that we use for our analysis; section 3, finally, offers some concluding remarks.

## **SECTION I: empirical literature on the CEECs**

Until the end of the 1990s relatively few studies took a quantitative approach to the complex relationship between FDI and the economies of the EU newcomers. Most surveys and econometric studies belonging to this first wave are concisely reviewed by Holland *et al.*, (2000), which allows us here to concentrate on the more recent ones.

The study of transition-economies requires a set of variables which are representative of the overall social and political situation of a country in addition to the variables commonly used in the "new-trade-new-geography" theory such as market size (and/or potential demand) and the geographical distance, combined with (mainly labour) cost differentials.<sup>5</sup> In the case of transition-countries the relative backwardness in the business operating conditions, including the ongoing process of liberalisation and privatisation, and some political risks concerning the quality of the institutional environment and the legal framework also deserve attention. Bevan *et al.* (2004) are very accurate in the description of the effects of the institutional environment and in providing the testable hypotheses. Their contribution is by and large also the most complete insofar as these aspects are concerned. A review of the most recent literature on FDI provides a tentative list of the variables most commonly used in the

---

<sup>4</sup> Since 1998 the EBRD considered these three economies as having nearly converged to the standards of industrialised economies according to 9 transition indicators. The main trend in growth confirms the relative similarity: from a confrontation with the other countries of the area, one can see that heavy and wide reforms have produced a faster turnaround in growth (there is a positive GDP rate of growth in 1994 only in these countries) and a smaller cumulative decline through 1989-94 with respect to the others [Sachs and Warner, 1995]. Moreover, only these countries have been important FDI targets with significant inflows also in an international comparison [Hunya, 1997].

<sup>5</sup> The first kind of motivations should capture the horizontal MNEs' activity *replicating* production in a market-seeking strategy, while the second one should give account of the vertical MNEs' activity *fragmenting* production in an efficiency-seeking vision.

empirical analysis, namely: (i) operation risk index (ORI),<sup>6</sup> (ii) political risk index (PRI),<sup>7</sup> (iii) legal framework index,<sup>8</sup> all of them provided by BERI (Business Environment Risk Intelligence); (iv) the credit rating index elaborated by the Institutional Investment<sup>9</sup>; (v) the World Bank institutional and legal quality indices<sup>10</sup>; (vi) the EBRD index for the degree of development of security markets and non-financial institutions<sup>11</sup>; (vii) the EBRD overall composite index<sup>12</sup>; (viii) EBRD's transition scores; (ix) the Transparency International index of corruption perception; (x) the Euromoney index of market perception<sup>13</sup>; (xi) some indexes related to liberalisation and specific-capital-flows restriction elaborated by individual scholars<sup>14</sup>; (xii) indicators of privatisation process and methods, usually proxied by dummy variables.

The empirical evidence is spread across a wide range of outcomes. However, the studies about the motivations of FDI provide some "regularities" despite differences in time spans, the sets of home- and host- countries considered, as well as the techniques they use. First of all, the Market size and the potential demand - sometimes called "gravity factors" - are consolidated variables and they turn out extremely significant in Lansbury *et al.* [1996], Altomonte [2000], Holland *et al.*[2000], and Bevan and Estrin [2004].<sup>15</sup> The institutional variables are predominantly significant. "Host-country transition progress, perceived political stability and low perceived risk levels are positively associated not only with the overall level of FDI inflow, but also with the character of the investment" [Lankes and Venables, 1996, p. 346], i.e. an investment more firmly maintained, and more integrated with the general politics of the parent-firm. In fact, a composite variable for investment climate is extremely important in Deichman [2001]. The perception of risk and the state of economic liberalisation and of reforms are highly and positively significant in Garibaldi *et al.* [2001]. The PRI and ORI variables are equally extremely significant in Singh and Jun [1996] and the ORI has a

---

<sup>6</sup> Altomonte [2000] and Resmini [2001]; Giner-Giner [2004] in a different geographical context.

<sup>7</sup> Singh and Jun [1996].

<sup>8</sup> Altomonte [2000].

<sup>9</sup> Bevan and Estrin [2004].

<sup>10</sup> Garibaldi *et al.*, [2001].

<sup>11</sup> Garibaldi *et al.*, [2001].

<sup>12</sup> Deichmann [2001]

<sup>13</sup> Garibaldi *et al.*, [2001]; Frenkel *et al.*, [2004].

<sup>14</sup> de Melo *et al.*, [1996] calculated a liberalisation index which has been utilised by Kinoshita and Campos, [2003], and by Garibaldi *et al.*, [2001]. The latter - besides elaborating a more complex index on that basis - compute an index of restriction to capital flows.

strong effect in Altomonte [2000] and in Resmini [2001], where it has particular impact in scale intensive sectors. The risk index and the economic development index play a substantial role in Frenkel et al. [2004], the proxy for infrastructures and the indices for the external liberalisation are the most robust variables in Kinoshita and Campos [2003]. On the contrary, in Bevan and Estrin [2004] the "country risk" variable is not significant. However, this might be due to the peculiar characteristic of their variable i.e. the credit rating from Institutional Investor, which is an indicator based upon the opinion of international banks. It is quite plausible that institutional investors believe that the transition process is too big to fail even though it necessarily involves some costs, and that such worries do not affect the decision of whether to invest in a given area. As far as privatisation is concerned, Djankov and Murrell [2002] - which in our knowledge is the most exhaustive study on this topic - assert that the aggregate effects of privatisation on enterprise restructuring in Eastern Europe are positive and that different types of owners (i.e. different methods of privatisation) matter in so far as they have different effects on the business environment. Also Kalotay and Hunya [2000] affirm that the methods matter, and Estrin *et al.* [2004] find that mass-privatization has had a growth enhancing function.

Secondly, evidence about other "traditional" variables like distance or labour costs, ) is less robust. However, sometimes contradictory empirical results might be ascribed to the dynamic nature of the transition process, so that some of the factors that were at work in the early stages of transition are no longer effective as the process evolves, while new variables come into the picture. In this sense the distance variable provides an interesting example to the extent that it is not significant in Altomonte [2000], though it was significant in earlier Cieřlik [1996]. Since distance is a proxy for customary relations, it is plausible to assume that at the outset of the transition process FDI was more likely to originate from closer countries - mainly Germany and Austria - and only during the more advanced stages of transition more far away partners - more "culturally distant" partners - would have been attracted by these countries. This is the "proximity-matter" argument very often present in the literature on FDI. Similarly, the proxies for endowments (*i.e.*, some differences between labour costs in the home and host country) were not significant in earlier studies, while they

---

<sup>15</sup> Bevan and Estrin [2004] shows also a significant "announcement" effect related to the EU accession of some CEECs and yet indicative of future markets and demand.

were found to significantly affect FDI inflows later on<sup>16</sup>. The interpretation could easily be that at the beginning of the process a first-mover market-seeking kind of opportunity was the best option,<sup>17</sup> coming from those developed countries which were more able to disentangle what was going on in the transition countries. Moreover, at least at the beginning of the process the differences in the labour markets seem more important in choosing the location *among* the countries in transition rather than influencing the choice between the home- and the host-countries (Lansbury *et al.*, 1996). For instance, the labour-cost differential is not significant in Cieřlik [1996], while it is so in the more recent Altomonte [2000], in Deichmann [2001], in Holland *et al.* [2000], and in Bevan and Estrin [2004]. Again, no or limited role for the cost-variables is consistent with an earlier typology of foreign investment where "horizontal" large MNEs mainly interested into the replication of both production and distribution are present. This structure evolves through time towards one where also "vertical" MNEs are present, interested in some form of fragmentation of their production, and eventually enlarges to a group with a more conspicuous presence of smaller late comers SMEs, more sensible to costs. Resmini [2001] sectoral results, for instance, give evidence of such a pattern. Last, the role of incentives (fiscal, financial, and others) seems scarce: Lansbury *et al.*, [1996], Economists Advisory Group [1998] and the more recent Sass [2003].

In what concerns the effects of FDI, evidence of their complementarity with trade is provided in Singh and Jun [1996], Hunya [1997], Brenton *et al.* [1999], Altzinger and Bellak (1999), Kaminski [2001], Bevan and Estrin [2004], Bradshaw [2005], and Kaminski and Ng [2005]. Nevertheless, the view that FDI contributes to exports is rather simplistic and optimistic since FDI is connected to both exports and imports, and it can eventually lead to trade deficit instead of surpluses.<sup>18</sup> Therefore FDI seems to contribute to the relative openness of an economy in a more general sense.

As far as the effects on growth are concerned, Barrell and Holland [2000] find that FDI's have contributed to the labour-augmenting technical progress in most manufacturing sectors in the Czech Republic, Hungary and Poland, due to the *intangibles* introduced by foreign

---

<sup>16</sup> Nevertheless, the "wage" variable is not significant even in a fairly recent paper such as Garibaldi *et al.*, [2001]

<sup>17</sup> As it seems to be the evidence [Hunya, 1997; Lankes and Venables, 1996], given that the first wave of FDI was coming from large MNEs (based in Germany, Austria, the Netherlands and the US) who were mainly looking for new local markets. Lankes and Venables [1996] recall that the function of the projects (serving the local market or being export-supply oriented) varies with the progress in transition.

<sup>18</sup> Hunya [1997] and Kalotay and Hunya [2000].

firms. Marin *et al.* [2002] find evidence of technology spillovers from the German firms to their affiliates in the CEECs, both because the former often belong to the high-technology sector and because they protect themselves choosing full ownership as the dominant entry-mode. On the contrary, Uminski and Stepniak [2004] show for Poland that just a second-rank category of technical progress has been very often transferred. Although the positive impact of FDI on the total factor productivity of recipient firms is confirmed also in Djankov and Hoekman [2000], the same authors find that greater foreign participation in an industry affects negatively and significantly the performance of other firms lacking any form of foreign partnership, as if the competition effect would dominate the technological one. This result is also confirmed by Holland *et al.* [2000] for the three countries, while Konings [2001] does not find any spillover to domestic firms in Poland. It seems that foreign ownership limits the options for future company strategies and for R&D activity [Hunya, 1997], and that some crowding out of domestic firms has taken place [WIR, 1999 and WID, 2003]. However, notwithstanding the fact that the acquired firms could be flattened to sub-units, and that the staff is often reduced, all the surveys of the 1990s indicate that the new organisational discipline and the innovative role of being part of the MNE network lead to an overall improvement in the industrial-relations world.<sup>19</sup> However, the employment side is almost unaffected: it has been proved recently that inward flows had some minimum effect on employment in the Czech Republic [Kippenberg 2005], and that on the average in the area it did not bring skills upgrading, it produced marked wage differentials between areas with and without FDI, and it did not democratise the industrial relations [Smith and Pavlinek, 2000]. Just in the Polish case some positive effects on employment are present [Altomonte and Resmini, 2002], even though the influence on the labour market of being privatised seem to be a short run outcome since it is concentrated within a range of 3-6 years after privatisation [Mickiewicz *et al.*, 2005].

## **SECTION II: the empirical estimate**

### **II.1 The data**

In our paper we use different data sets, in order to have the most reliable data possible. It is worthy noticing, in fact, that there are still persistent problems in collecting data about

---

<sup>19</sup> Kalotay and Hunya [2000].



Central and Eastern European Countries, even in the case of the Czech Republic, Hungary and Poland that are by far the most advanced countries. We did not use statistical publication of these countries because incomplete or not comparable between each other.

At an aggregate level, we use the data provided by the World Investment Report, published by the UNCTAD. The 2003 edition provides statistics about inwards and outwards FDI from 1998 to 2002, both in terms of flows (millions of dollars and as a percentage of gross fixed capital formation) and stock (millions of dollars and as a percentage of GDP). As we need data from the beginning of the transition period, we use as well older publication of the same World Investment Report. The 2001 edition provides FDI statistics back to 1995.

At country level we use the data on the Transition Reports, published annually by the EBRD. The 2001 edition provides statistics on FDI inflows in transition countries from 1989 to 2001 (projection), on the cumulative FDI inflows (general and per capita) in the period 1989-2000, and FDI inflows per capita in the years 1999 and 2000. All these data are expressed in million of US\$. Furthermore it provides data on FDI inflows as a percentage of GDP in the years 1999 and 2000.

Data on the education level of the labour force come from The World Development CD-Rom by the OECD, while the ones on IT access and infrastructures we have use the World Development Indicators by the World Bank.

As for other institutional indexes Euromoney provides the indicator for political and economic risk. The Heritage Foundation developed an index of political freedom.

Although not a part of our data, an important source of disaggregate data is provided by Altomonte, in Alessandrini (2000). The statistical annex shows several different data: the initial value and the number (as a percentage too) of the investment initiatives of the EU-15 countries, of the USA, Japan and South Korea in the transition countries (1987-1998, in million of Euro), also differentiating between economies of scale sector and traditional sector; the initial value and the number (as a percentage too) of the European investments by sector and host countries. However, data are not divided per years and therefore it was not possible to use.

There is also some data we have not been able to use: for instance, Transparency International Corruption Index is not available for the whole period we are interested in. The same applies for Polity IV, as a measure of the quality of political institutions, and to the EBRD index for infrastructures.

## II.2 The model

In this section we outline how we develop our model and the variables we use to specify it.

The aim of our research is to identify how institutional variables affect FDI inflow in the three countries we examine. Thus our explicatory variables are, mainly, as we shall examine below of institutional character. In particular, given the peculiar context of transition, an important role is played by the privatisation strategies. Therefore, we describe the FDI inflows as follows:

(1)

$$FDI = f(GDP\_1, PRMeth, LabSkills, EconReforms, Wage)$$

Our model, in short, describes the FDI inflows as a function of the size effect (represented by the *Gross Domestic Products* lagged one year), of the various privatisation methods (*PRMeth*), by the skills of the labour force, (*LabSkills*), by an index (or more indexes, in fact) of economic (and political) reforms (*EconReforms*), and by the temporal dynamics of wages (*Wage*).

### *Explanatory variables*

We, then, use a number of variables to capture the **institutional factors** that influence FDI inflows.

*Privatisation* has been a hotly debated argument in the debate over economic reforms in post-socialist economies. We distinguish three different privatisation methods: direct sale (DS), voucher privatisation (VS) and Management and Employees' Buyouts (MEBOs), which of them is represented by a dummy variable in our model. The value we give to each dummies is 1 in the case the selected variable is the primary method of privatisation, 0,5 if it is the secondary method, 0 if is absent, following the data provided by the EBRD's Transition Reports (see also Garibaldi *et al.* for the same methodology). It is not the aim of this paper to review the arguments and the instruments alike of the privatisation debate. It would be enough to remind that the countries we selected have chosen different privatisation paths and, thus, can offer us an appropriate synthesis on the impact of different methods for creating a favourable market environment.

In particular, the Czech privatisation privileged the so-called voucher privatisation, that basically consisted in distributing shares, in form of voucher, of the State property that was about to be sold to the whole population and then organising auctions to allow people to buy shares of the firms they were interested in. Private investment funds, although not included in the mass privatisation plan, were able to collect approximately two-thirds of the voucher points, thus acquiring important shares of SOEs. Ownership shifted to outside investors. VP has been a popular method of privatisation in transition countries and had the advantage of being fast and to redistribute equally the State ownership. Yet, it created a long agency chain and therefore problems of corporate governance<sup>20</sup>. The expected impact on FDI is mixed: an early privatisation is supposed to boost FDI, while the problems of corporate governance can trigger it.

The Polish mass-privatisation programme, instead, was designed to create dominant owners for the enterprises to be privatised, in order to guarantee the appropriate incentives to restructure the firms and to speed up their ultimate and genuine transfer to the private sector. Mass privatisation in the industry sector was delayed: the programme, launched in 1994, four years after the liberalisation, tried to combine a broad public participation with a concentration of shares in the hands of large investors<sup>21</sup>. In the Polish case, there is also an interesting case of dynamic that our model captures: while for the years before 1994 MEBOs were the primary means of privatisation, VS took its place in the year of mass privatisation, while in the last years the dominant method to privatise was DS. The changing values of our dummies represent this evolution.

The sale of SOEs has been the preferred path in Hungary. SOEs were converted into corporations the stocks of which were in the hands of the State Property Agency that selected and then prepared the firms were ready to be privatised<sup>22</sup>. Firms were also allowed to self-privatise. DS is the easiest privatisation methods, but is slow and too much politicised, giving too much power to the bureaucrats, whilst raising less revenues for the State<sup>23</sup>. While this method is expect to have a strong effect on FDI at the beginning – and, in fact, Hungary has been the most successful country in attract foreign investment in the first years of transition –

---

<sup>20</sup> Stiglitz [1999].

<sup>21</sup> Brada [1996].

<sup>22</sup> Brada [1996].

<sup>23</sup> Brada[1996], Bornstein[1999].

DS influence on FDI can be triggered in a second period, as best firms are already sold and last ones tend to attract less interest.

As far as institution building is concerned, we have used an index of *economic freedom* developed by the Heritage Foundation and that includes important aspects of transition, as regulations, development of the banking sector and property rights enforcement. Rule of law is a focal point in the debate over the transition to market economy and its respect is considered to be a pillar of the success of transition strategies. Reduction of over-regulation alike is important to promote entrepreneurial spirit. The index captures the impact of institutions building in the development of an attractive environment for investors, and we use it also as a proxy of economic corruption, given the strong correlation found between over-bureaucratisation, non respect of the rule of law and corruption itself. On the base of the world index, we have calculated the ranks of the three countries (*Reconfree*), expecting FDI's inflow to increase as reforms are implemented and the rank becoming higher.

The *Country risk* index by Euromoney is a proxy for investor's perception of the countries' situation: this should incorporate political risk as well as economic stability. Also in this case we have compiled a ranking, so to compare transition performances to the rest of the world. This scheme is intended to capture the progresses made by reforms as time goes by. In fact, these progresses should be higher than in the rest of the world, given the transitional nature of the economic and political systems. Progress in the rank (*rankeuro*) are expected to positively influence FDI's inflows.

We have also included an *information technology access index* to capture the impact of IT development in the last decade. In particular, in the case of Eastern Europe, where the use of telecommunications was discouraged by the State, the increase in the number of phones, computers and internet alike is an important signal of modernisation that increase the chances of linkages with foreign partners.

Economic variables are as well part of our model.

Gross domestic product (*lrgdp\_1*), lagged one year, is meant to capture the size effect. The very fact of having selected those three countries that presented paths of regular and steady growth after the initial output collapse should allow us to concentrate on institutional factors avoiding output shocks generated both on the demand and supply side.

Annual increase of *wage level* (*lwage*) adjusted for productivity and differential from the average of the rest of the other European Countries is one of our measures for

competitiveness. Results can be puzzling. Although the literature on FDI suggests an increase of investment directly related to the widening of the salary gap, this may not be the case in our three countries. FDIs can be not related to salary level when they are market seeking, as they were in some countries in Eastern Europe. Secondly, an increase of wages can also be a proxy of more economic stability and/or of restructure of the firms – a restructured firm squeeze the costs reducing the number of employees and increase productivity and therefore wages. The other two variables we used to test the model, labour cost (lab cost) and the differential between real wage increase in the G7 countries and our three countries (*wdiff*), suffer of the same problem.

We use secondary education of the labour force to measure the *skills* of the workers (*lskill*). We have preferred this parameter to tertiary education insofar as FDIs are concentrated in the manufactory sector where educational level is supposed to be lower. Furthermore, in particular for what concerns higher education, there may be some puzzling aspects in transition: in fact, given the initial conditions of an extremely high percentage of well-educated workers, the trend, as a consequence of the initial output fall and of the collapse of the public educational system, is likely to be negative, an oddly situation in the existing literature. Secondary education, instead, shows a more stable path.

We did not take into account some other variables and we owe an explanation for this. Initial conditions, that have been such an important argument in the transition debate, are not represented because our data starts from 1993 and most of the differences between our three countries have been offset during the first four years of transition. In addition, being the Czech Republic, Hungary and Poland the most three advanced economies in the area, they are the ones most easily comparable. Furthermore, fixing our initial year in 1993 is a useful tool to avoid the impact of the first years of transition. Shock therapy and gradual approach would have been played a too big role in our regression, offsetting the impact of the variables we are interested in. In 1993 GDP reduction and hyperinflation had already disappeared and both the three countries were slowly starting to resume economic growth. As long as economic stability was already achieved, we have decided not to analyse the impact of inflation and different exchange rate regimes, albeit some substantial differences among the countries.

In the first round of regressions we have used the following equation, testing it alternatively with the labour cost, the real wage and the real wage differentials as proxies for competitiveness.

$$(2a) \quad lrFDI = \alpha lrGDP_{-1} + \beta VP + \gamma DS + \delta MEBOs + \eta reconfree + \vartheta lskill + \kappa labco$$

$$(2b) \quad lrFDI = \alpha lrGDP_{-1} + \beta VP + \gamma DS + \delta MEBOs + \eta reconfree + \vartheta lskill + \kappa lwage$$

$$(2c) \quad lrFDI = \alpha lrGDP_{-1} + \beta VP + \gamma DS + \delta MEBOs + \eta reconfree + \vartheta lskill + \kappa wdiff$$

where *lrFDI* is the log of the FDI inflows, *lrGDP<sub>-1</sub>* is the log of the GDP lagged one, *VP* is voucher privatisation, *DS* is direct sale, *MEBO* is Management and Employees Buyout (our third dummies that becomes the constant in the regression), *reconfree* is the position of our countries in the world-rank created using the index of economic freedom of the Heritage Foundation, *lskill* is the labour skills as described above and *labco* (2a) is the labour cost, *lwage* (2b) is the real wage corrected for the productivity and *wdiff* (2c) is the real wage differential between the G7 countries and the three selected countries.

In the second round, using only the last two of the above equations we have added the rank of our three countries in the index elaborated each year by Euromoney (*rankeuro*).

(3a)

$$lrFDI = \alpha lrGDP_{-1} + \beta VP + \gamma DS + \delta MEBOs + \eta reconfree + \vartheta lskill + \kappa lwage + \mu rankeuro$$

(3b)

$$lrFDI = \alpha lrGDP_{-1} + \beta VP + \gamma DS + \delta MEBOs + \eta reconfree + \vartheta lskill + \kappa wdiff + \mu rankeuro$$

### SECTION III: Results

The results we find in all the five equations are in line with our expectations. In all the five regression the GDP is positive and significant, confirming all the existing results in the

literature. Voucher Privatisation and Direct Sale are both positive and extremely significant, reflecting the idea that extensive programmes of privatisation foster FDIs. MEBOs, instead, is negatively correlated with FDIs, although significant only in equations 2a and 3b. This is not surprising: management and employee's buyout usually happened in very small firms, unable to attract the interest of foreign partners. Furthermore, insiders' privatisation, as effectively MEBOs are, is usually the less efficient mean of privatisation and the less likely to foster restructuring. It is a common feature in the existing literature, in fact, that insiders, fearing to lose their jobs, are not willing to improve efficiency through restructuring. This, of course, represents a serious obstacle for FDIs.

Labour skills are also positive and significant as well as the rank of economic freedom. Structural reforms, de-bureaucratisation and de-politicisation of the economic activity, creation of a functioning financial sectors are all circumstances that seem, as expected to attract foreign capital. The Euromoney score that includes political stability too is also positive, albeit less significant in the two regression (3a, 3b) where it is present.

Finally, wage and labor cost. Real wage is constantly negative (as well as labor cost) in all the equations where is present. This is not surprising since an increase in real wage (or in the labour cost) is likely to discourage FDIs. Conversely, wage differential in the equation 2c and 3b is positive. Yet, in all five cases the parameter is not significant. As previously said, in fact, the wage effect in the transition-case is particularly puzzling. Market-seeking firms may not be particularly influenced by wage increase in their investment decisions (contrary to efficiency-seeking ones), but, above all, wage increase may also signal an implemented restructuring process in the firms, with efficiency gains and, via downsizing, less costs. Finally, wage dynamics is likely to be influenced by the Balassa-Samuelson effect.

In conclusion, our analysis suggests that FDI inflows in mature transition economies is likely to be strongly influenced by institutional factors. Privatisation methods matters, as insiders' privatisation discourages foreign investment, contrary to more extensive and efficient means of privatisation such as Direct Sale and Voucher Privatisation (in the Czech version, at least). Improvement in the economic environment, de-bureaucratisation and, eventually, demise of the old socialist structures, are, unsurprisingly, a positive factor as well. With this research we attempted to reduce the sample in order to work more efficiently on institutional factors, avoiding, thus, the problems related with the first phase of transition. The focus on these factors is a consequence of authors' belief in the importance of institutions to

build the market. We hope that more extensive researches, with an enlarged number of countries already economic and political stable, and with more uniform data available, may complete this path.



## APPENDIX

### Model 2a:

Regression with robust standard errors

Number of obs = 30  
 F( 6, 23) = 16.23  
 Prob > F = 0.0000  
 R-squared = 0.6836  
 Root MSE = .405

lrfdi	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
lrgdp_1	.7771206	.1737968	4.47	0.000	.4175945	1.136647
vp1	2.71131	.6508065	4.17	0.000	1.365015	4.057606
ds1	2.892999	.7548603	3.83	0.001	1.331451	4.454546
recofree	.0275136	.0094121	2.92	0.008	.0080433	.0469839
lskill	.0425613	.0104485	4.07	0.000	.020947	.0641756
labcost	-.0043787	.0050355	-0.87	0.394	-.0147954	.0060379
_cons	-7.195217	3.440979	-2.09	0.048	-14.31342	-.0770103

### Model2b:

Regression with robust standard errors

Number of obs = 30  
 F( 6, 23) = 13.49  
 Prob > F = 0.0000  
 R-squared = 0.6705  
 Root MSE = .41331

lrfdi	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
lrgdp_1	.5960234	.2124952	2.80	0.010	.1564437	1.035603
vp1	2.300951	.6045471	3.81	0.001	1.05035	3.551552
ds1	2.411017	.658859	3.66	0.001	1.048063	3.773971
recofree	.0253583	.0098087	2.59	0.017	.0050675	.0456491
lskill	.0415293	.0122318	3.40	0.002	.0162259	.0668326
lwage	-.402267	1.227772	-0.33	0.746	-2.942107	2.137573
_cons	-1.571155	9.068271	-0.17	0.864	-20.3303	17.18799

### Model 2c:

Regression with robust standard errors

Number of obs = 30  
 F( 6, 23) = 14.69  
 Prob > F = 0.0000  
 R-squared = 0.6701  
 Root MSE = .41352

lrfdi	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
lrgdp_1	.6157773	.1767096	3.48	0.002	.2502257	.9813289
vp1	2.295687	.5881536	3.90	0.001	1.078998	3.512375
ds1	2.424329	.6476164	3.74	0.001	1.084632	3.764026
recofree	.0253044	.0097909	2.58	0.017	.0050503	.0455585
lskill	.0416659	.0121268	3.44	0.002	.0165797	.0667522
wdiff	.0032364	.0114466	0.28	0.780	-.0204428	.0269155
_cons	-3.816686	3.263664	-1.17	0.254	-10.56809	2.934716

### Model 3a

Regression with robust standard errors

Number of obs = 30  
 F( 7, 22) = 20.99  
 Prob > F = 0.0000  
 R-squared = 0.7202  
 Root MSE = .38941

lrfdi	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
lrgdp_1	.5800104	.2238207	2.59	0.017	.1158346	1.044186
vp1	3.139733	.782341	4.01	0.001	1.517258	4.762209
ds1	3.909753	1.030637	3.79	0.001	1.772343	6.047164
recofree	.0203871	.0101643	2.01	0.057	-.0006923	.0414665
rankeuro	.0353388	.0174417	2.03	0.055	-.000833	.0715107
lskill	.0502576	.0144623	3.48	0.002	.0202646	.0802505
lwage	-.534749	1.214817	-0.44	0.664	-3.054126	1.984628
_cons	-4.380797	8.817316	-0.50	0.624	-22.66679	13.9052

### Model 3b

Regression with robust standard errors

Number of obs = 30  
 F( 7, 22) = 22.18  
 Prob > F = 0.0000  
 R-squared = 0.7190  
 Root MSE = .3902

lrfdi	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
lrgdp_1	.6128206	.1824366	3.36	0.003	.2344702	.9911711
vp1	3.104722	.7557162	4.11	0.000	1.537462	4.671981
ds1	3.896538	1.020273	3.82	0.001	1.780622	6.012454
recofree	.0203623	.0101301	2.01	0.057	-.0006464	.0413709
rankeuro	.035006	.0171488	2.04	0.053	-.0005583	.0705704
lskill	.0498433	.0142012	3.51	0.002	.0203919	.0792947
wdiff	.003664	.0111453	0.33	0.745	-.0194499	.0267778
_cons	-7.387813	3.42056	-2.16	0.042	-14.48162	-.2940049

## References

- Altomonte C.**, (2000), "Economic determinants and institutional frameworks: FDI in economies in transition", *Transnational Corporations*, Vol. 9, No. 2, 75-106
- Altomonte C. and L. Resmini**, (2002), "Multinational Corporations as a catalyst for local industrial development. The case of Poland", *Scienze Regionali*, Vol. 1, No. 2, 29-58
- Altzinger W. and C. Bellak**, (1999), "Direct Versus Indirect FDI: Impact on Domestic Exports and Employment", *Wirtschaftsuniversität Wien*, Working Paper No. 9
- Baltowski, M. and T. Mickiewicz**, (2000), "Privatisation in Poland: Ten Years After," *Post Communist Economies*, 12, 425-43
- Bedi, A. S., and A. Cieslik**, (2002), "Wages and Wage Growth in Poland: The Role of Foreign Direct Investment," *Economics of Transition*, 10, 1-27
- Barrell R. and D. Holland**, (2000), "FDI and enterprise restructuring in Central Europe", *Economics of Transition*, Vol. 8, No. 2, 477-504
- Bevan A. A. and S. Estrin**, (2004), "The determinants of FDI into European transition economies", *Journal of Comparative Economics*, Vol. 32, Issue 4, 775-787
- Bevan A. A. et al.**, (2004), "Foreign investment location and institutional development in transition economies", *International Business Review*, Vol. 13, 43-64
- Bornstein M.**, (1999): "Framework Issues in the Privatisation Strategies of the Czech Republic, Hungary and Poland," *Post Communist Economies*,
- Brada J.**, (1996), "Privatisation is transition -or is it?", *Journal of Economic Perspectives*, No. 10 (2),
- Bradshaw M. J.**, (2005), "FDI and economic transformation in Central and Eastern Europe", in **David Turnock (ed.)**, *FDI and regional development in East Central Europe and former Soviet Union*, Ashgate, , 3-19
- Brenton P. et al.**, (1999) "Economic integration and FDI: an empirical analysis of foreign investment in the EU and in Central and Eastern Europe", *Empirica*, vol. 26, 95-121
- Cieřlik A.** (1996), Foreign direct investment in Central Europe's transition: early results, Economic Discussion Papers no. 28, Faculty of Economic Sciences, University of Warsaw,
- Cieřlik A. and M. Ryan**, (2004), Explaining Japanese direct investment flows into an enlarged Europe: a comparison of gravity and economic potential approaches, *Journal of the Japanese and International Economics*, vol. 18, Issue 1, 12-37

- de Melo M. et al.**, (1996), “From plan to the market: patterns of transition”, Policy Research WP No.1564, Transition Economics Division, Policy Research Department, The World Bank
- Deichman J.I.**, (2001), “Distribution of FDI among transition economies in Central and Eastern Europe”, *Post-Soviet Geography and Economics*, Vol. 42, No. 2, 142–152
- Djankov S. and B. Hoekman**, (2000), “Foreign investment and productivity growth in Czech enterprises”, *The World Bank Economic Review*, vol. 14, No.1, 49-64
- Djankov S. and P. Murrell**, (2002), “Enterprise restructuring in transition: a quantitative survey”, CEPR DP 3319
- EBRD**, Transition Report 1993-2003
- Economists Advisory Group Ltd.**, (1998), “Foreign Direct Investment”, *The Single Market Review*, Vol. 1, Subseries IV: Impact on trade and investment, European Communities
- Estrin S. et al.**, (2004), Privatisation methods and economic growth in transition economies, FEEM WP No. 105.2004
- Frenkel M. et al.**, (2004), “A panel analysis of bilateral FDI flows to emerging economies”, *Economic Systems*, Vol. 28, Issue 3, 281-300
- Garibaldi P. et al.**, (2001), “What moves capital to transition economies?”, *IMF Staff Papers*, Vol. 48, Special Issue
- Giavazzi F. and G. Tabellini**, (2004), “Economic and political liberalizations” NBER WP 10657
- Giner J.M. and G. Giner**, (2004), “An interpretative model of FDI in China: an economic policy approach”, *China Economic Review*, vol. 15, No. 3, 268-280
- Gradev G.**, (2001), “EU companies in Eastern Europe: strategic choices and labour effect”, in **Grigor Gradev (ed.)**, *CEE countries in EU companies' strategies of industrial restructuring and relocation*, Brussels: European Trade Union Institute, 1–19
- Halpern L. and B. Muraközy**, (2005), Does distance matter in spillover? CEPR DP No. 4857
- Holland D. et al.**, (2000), “The determinants and impact of FDI in Central and Eastern Europe: a comparison of survey and econometric evidence”, *Transnational Corporations*, Vol. 9, No. 3, December, 163-212
- Hunya G.**, (1997), “Large privatisation, restructuring and foreign direct investment”, in **Salvatore Zecchini (ed.)**, *Lessons from the economic transition: Central and Eastern Europe in the 1990s*, Kluwer

- Javorcik B. S.**, (2002), "The composition of FDI and protection of intellectual property rights: evidence from transition economies", World Bank Policy Research Working Paper No. 2786
- Kalotay K. and G. Hunya**, (2000), "Privatization and FDI in Central and Eastern Europe", *Transnational Corporations*, Vol. 9, No. 1, 39-66
- Kaminski B.** (2001), "How accession to the European Union has affected external trade and FDI in Central European economies", the World Bank, Policy Research Working Papers No. 2578
- Kaminski B. and F. Ng**, (2005), "Production disintegration and integration of Central Europe into global markets", *International Review of Economics & Finance*, vol. 14, issue No. 3, 377-390
- Kinoshita Y.**, (2001), "R&D and technology spillovers through FDI: innovation and absorptive capacity", CEPR DP No. 2775
- Kinoshita Y. and N.F. Campos**, (2003), "Why does FDI go where it goes? New evidence from the transition economies", CEPR DP No. 3984
- Kippenberg E.**, (2005), "Sectoral linkages of FDI firms to the Czech Economy", *Research in International Business and Finance*, Vol. 19, No. 2, 251-265
- Konings J.** (2001), "The effects of FDI on domestic firms: evidence from firm-level panel data in emerging economies", *Economics of Transition*, Vol. 9, No. 3, 619-633
- Lansbury M. et al.**, (1996), "FDI in Central Europe since 1990: an econometric study" National Institute Economic Review, No. 156
- Lankes H-P. and A.J. Venables**, (1996), "FDI in economic transition: the changing pattern of investment", *Economics of Transition*, Vol. 4, No. 2, 331-347
- Marin D. et al.**, (2002), Ownership, capital or outsourcing: what drives German investment to Eastern Europe? CEPR DP No. 3515
- Mickiewicz T. et al.**, (2005) "Privatisation, corporate control and employment growth: evidence from a panel of Polish firms, 1996-2002", *Economic Systems*, Vol. 29, No. 1, 98-119
- Nellis, J.**, (1999), "Time to rethink privatisation in transition economies?", IFC Discussion Paper, 38
- Resmini L.**, (2001), "The determinants of Foreign Direct Investment into the CEECs: new evidence for sectoral patterns", *Economics of Transition*, Vol. 8, 665-689

- Sachs J.D. and A. Warner**, (1995), "Economic reform and the process of global integration", *Brookings Papers on Economic Activity*, I, 1-118
- Sass M.** (2003), "Competitiveness and economic policies related to foreign direct investment", *mimeo*, Ministry of Finance of Hungarian Government, WP No. 3
- Singh H. and K.W. Jun**, (1996), "Some new evidence on determinants of foreign direct investment in developing countries", *Transatlantic Corporations*, Vol. 5, 67-106
- Smith A. and Pavlinek P.**, (2000), "Inward investment, cohesion and the "Wealth of regions"" in **John Bachtler et al.**, (eds.), **Transition cohesion and regional policies**, Ashgate
- Soci A.**, (2006), "FDI: a difficult connection between theory and empirics", in **Bernard Fingleton (ed.)**, *New Frontiers in Economic Geography*, Edward Elgar, *forthcoming*
- Stiglitz J.E.**, (1999), "Whither Reform? Ten Years of Transition" <http://www.worldbank.org/research/abcde/stiglitz.pdf>
- Stiglitz, J.E. and D. Ellerman**, (2001), "Not Poles Apart: "Whiter Reform?" and "Whence Reform?""", *Journal of Policy Reform*, 4
- Uminski S. and A. Stepniak**, "Technology transfer through FDI to Poland. In line with the Lisbon process objectives?", Research Centre on European Integration, University of Gdansk, *mimeo*, 2004
- UNCTAD**, (1999), *World Investment Report: FDI and the challenge of development*; United Nations, New York
- (2001), *World Investment Report: Promoting linkages*, United Nations, New York
  - (2003), *World Investment Director: Central and Eastern Europe*, United Nations, New York