DEPARTMENT OF ECONOMICS
JOHANNES KEPLER UNIVERSITY OF LINZ

How Important is Employment Protection Legislation for Foreign Direct Investment Flows in Central and Eastern European Countries?

by

LEIBRECHT, Markus
SCHARLER, Johann*)

Working Paper No. 0716
October 2007

Johannes Kepler University of Linz
Department of Economics
Altenberger Strasse 69
A-4040 Linz - Auhof, Austria
www.econ.jku.at

*)johann.scharler@jku.at
phone +43 (0)70 2468 -8360, -9679 (fax)

How Important is Employment Protection Legislation for Foreign Direct Investment Flows in Central and Eastern European Countries?

Markus Leibrecht* Johann Scharler†

October 2007

Abstract

The purpose of this paper is to investigate empirically the importance of labor market conditions and in particular of employment protection legislation as a determinant of bilateral Foreign Direct Investment flows to seven Central and Eastern European countries. Although our results indicate that countries characterized by low unit labor costs tend to attract more Foreign Direct Investment, we find no evidence suggesting that employment protection legislation matters in this context. This result also holds if we control for the riskiness of the host countries.

JEL Classification: F21, F23, J50

Keywords: Foreign Direct Investment, Central and Eastern Europe, Labor Market, Employment Protection

*Vienna University of Economics and Business Administration, Institute for Public Sector Economics, Augasse 2 - 6, A-1090 Vienna, Austria, Phone (+43-1) 313 36-4264, Fax (+43-1) 313 36-9203, E-Mail: markus.leibrecht@wu-wien.ac.at.

†University of Linz, Department of Economics, Altenberger Strasse 69, A-4040 Linz, Austria, Phone: (+43-70) 2468-8360, Fax: (+43-70) 2468-28360,
E-Mail: Johann.Scharler@jku.at.

1 Introduction

Central and Eastern European Countries (CEEC) have increasingly become a destination for Foreign Direct Investment (FDI) over the last decades. For several reasons, FDI flows are generally regarded as an important source of growth for these economies. FDI increases the capital stock and thereby has a rather direct impact on the productive capacity in the host country. In addition, FDI may foster technological innovation by facilitating the diffusion of new technologies to the host countries. This aspects appears to be particularly relevant, since the literature on economic growth emphasizes the role of technological progress.[1] Consequently, FDI flows in CEEC may substantially shorten the transition period.

Hence, it is not surprising that the effects and the determinants of FDI in CEEC have been analyzed extensively. Although the literature has not yet reached a consensus concerning the most important determinants of FDI, gravity variables such as proximity and host market and home country size are typically found to be relevant (Bevan and Estrin, 2004; Demekas et al., 2007). In addition, several studies document that labor market conditions matter for FDI, where labor market conditions are typically summarized by unit labor costs. Most of these studies find that countries characterized by relatively low unit labor costs tend to have higher FDI inflows (see e.g. Bevan and Estrin, 2004; Carstensen and Toubal, 2004; Bellak et al., 2007). Thus, it appears that countries compete with low production costs to attract FDI. Although unit labor costs are certainly an important indicator for production costs and labor market conditions, institutional factors influencing the rigidity of labor markets in the host country may also determine FDI decisions of multinational companies (MNCs). Rigid labor markets impose costs of adjusting the production level. An MNC which invests in a country characterized by a large degree of labor market rigidity commits itself in a sense to maintaining its workforce rather stable. Haaland et al. (2002) formalize this point and argue that these considerations are especially relevant for companies operating in risky environments. Since riskiness increases the likelihood of a considerable reduction of the production level, firms may take poten-

[1] Liu (2002) finds that FDI generates large spillover effects on the level and growth of productivity in China.

tial adjustment or exit costs into account to a greater extent when making investment decisions. Consequently, rigid labor markets may deter FDI especially in countries which are classified as risky.

The purpose of this paper is to investigate empirically if labor market conditions and in particular employment protection legislation play a quantitatively important role for FDI flows to seven CEECs. Our contribution to the literature is three-fold: First, we have a particular focus on CEE host countries of FDI. So far only few studies deal with the impact of rigid labor markets on FDI in general and in CEECs in particular. Second, we include unit labor costs along with an indicator for labor market flexibility in our empirical model, which is not standard in the literature. And third, we use data on employment protection legislation based on the OECD-methodology (see OECD, 2004) as proxies for the rigidity of labor markets. Despite of some shortcomings the OECD indicator is the best indicator which is available for the purpose of making international comparisons (Ochel, 2005). To our knowledge these data have not been used so far to study the impact of labor market institutions on FDI in CEE host countries.

The analysis is based on a macro panel data set which comprises seven FDI home countries (Austria, France, Germany, Italy, the Netherlands, the United Kingdom, and the US) and seven host countries (Bulgaria, Croatia, the Czech Republic, Hungary, Poland, Slovenia and Slovakia). This group of host countries appears to be the main target for FDI within the CEEC.[2] The time span ranges from 1995 until 2003 as data on employment protection legislation is available for this time span only.

We find that FDI flows are significantly higher in countries with relatively low unit labor costs. Thus, we confirm the conventional wisdom in this respect. We also find that employment protection legislation does not exert a statistically significant impact on FDI flows. This result also holds if we control for the riskiness of the host countries.

The remainder of the paper is organized as follows: The next section gives a brief survey on the existing literature of labor market flexibility as a determinant of FDI. Section three describes the empirical model our analysis is based upon and briefly discusses the

[2]In 2003, the host countries in our sample accounted for 61 percent of the total inward FDI stock in the 17 CEECs. The seven home countries in our sample accounted for 73 percent of the inward FDI stock in the CEECs in our sample in 2003.

data used. Section four presents the results and section five concludes the paper.

2 Related Literature

Javorcik and Spatareanu (2005) study the importance of labor market characteristics using firm level data covering the period 1998 to 2001. Their sample includes Western and Eastern European host countries of FDI, with the latter including Bulgaria, the Czech Republic, Hungary, Poland and the Ukraine. As proxies for labor market flexibility they data from the Global Competitiveness Report published by the World Economic Forum and the Center for International Development at Harvard University as well as data compiled by Djankov et al. (2001) are used. Javorcik and Spatareanu (2005) find that greater labor market flexibility fosters FDI. Yet, they also report that for the CEECs the impact of rigid labor markets drops substantially.

Görg (2005) studies to what extent labor market regulations matter for the location of US outward FDI stocks in manufacturing in 33 host countries over the period 1986 to 1996. Görg (2005) also uses data from the Global Competitiveness Report to proxy labor market flexibility. He concludes that labor market regulation has an impact on the location decision. However, no CEEC is included in the sample.

Benassy-Quere et al. (2007a) analyze the impact of various institutional variables on the bilateral FDI stocks of a broad range of countries, mainly developing countries.[3] They also include three measures for the degree of labor market regulation in force taken from the Fraser Institute database and the Institutional Profile database developed by the foreign network of the French Ministry of Finance. For two of these three variables Benassy-Quere et al. (2007a) find a significant negative impact on FDI. The coefficient of the third variable, capturing the regulation of labor markets and taken from the Fraser Institute database, enters with the wrong sign, yet also statistically insignificant in the gravity model used.

A common feature of these three studies is that they do not include unit labor costs as an explanatory variable in their empirical model. Thus, an important determinant of FDI, potentially related to the degree of labor market flexibility, is omitted. Javorcik and

[3] A list of countries included in the estimation is not provided by Benassy-Quere et al. (2007a).

Spatareanu (2005) include a proxy for labor costs, which however does not capture labor productivity. Omitting labor productivity from the labor costs variable implicitly implies the assumption that the investor is able to transfer labor productivity from the home country to the host countries of FDI. Yet, when investigating FDI location decisions in the CEECs this assumption is probably not justified as these countries suffer inter alia from low quality firm specific infrastructure which results in a relatively low labor productivity (see e.g Bellak et al., 2007). Thus, for the CEECs it appears to be particularly relevant to control for labor productivity when measuring labor costs.

In contrast, Haaland et al. (2002) and Benassy-Quere et al. (2007b) include unit labor costs along with a proxy for labor market flexibility. Haaland et al. (2002) use data on 537 subsidiaries of Western MNCs located in the manufacturing sector in three CEECs, Bulgaria, Poland and Romania, that covers the period 1994 to 1997. They find that labor market flexibility, measured by the excess job reallocation rate, has a significant negative impact on the location decisions of MNCs.

Finally, Benassy-Quere et al. (2007b) using sector-level data on US outward FDI stocks for the period 1994 to 2002 in 15 Western and three Eastern European countries (the Czech Republic, Hungary and Poland) and using data from the Fraser Institute as proxies for labor market flexibility generally find no statistically significant negative impact of labor market flexibility on FDI. Their proxy for labor market flexibility enters significantly only in a few cases and in these cases it carries the wrong sign.

Summing up, the existing literature on FDI and labor market flexibility is scarce and shows an ambiguous picture as not all studies find a significantly negative impact of labor market flexibility on FDI. Moreover, none of the existing studies has a particular focus on FDI to a broad set of CEE host countries.

3 Empirical Specification and Data

Our analysis is based on the gravity model to explain bilateral FDI outflows from the seven home countries of FDI to the seven CEE host countries mentioned above from 1995 to 2003. Although the gravity model is primarily the workhorse model for the analysis of international trade flows, it has also been successfully applied to explain bilateral FDI

flows (see Bevan and Estrin, 2004, among others). Hence, we include the standard gravity variables, that is the GDPs of the home country, GDP_{it}, and the host country, GDP_{jt}, capturing host market and home country size, and the distance, $dist_{ij}$, between home and host country, capturing inter alia transport costs, cultural similarities and historical ties, in our equation.

We augment the standard gravity model by a set of control variables, unit labor costs and indicators for employment protection legislation of various forms. Specifically, we model FDI outflows from home country i to host country j as

$$FDI_{ijt} = \alpha + \beta' X_{ijt-1} + \gamma' Y_{ijt-1} + \delta' Z_{jt} + \lambda_t + \alpha_{ij} + u_{ijt}, \tag{1}$$

where $X_{ijt} = (\log GDP_{it}, \log GDP_{jt}, \log dist_{ij})$ is a vector containing the standard gravity variables in logged form. Y_{ijt} is a vector of control variables motivated by the literature (see e.g. Bevan and Estrin, 2004; Carstensen and Toubal, 2004; Demekas et al., 2007). Depending on the exact specification estimated, Y_{ijt} will include the bilateral effective average tax rate of a host country, $beatr_{ijt}$, a proxy for the privatization process in the host country in logged form, $priv_{jt}$, a proxy for political risk, $risk_{jt}$, in the host country and the increase in producer prices, $infl_{jt}$, as a proxy for the macroeconomic stability.

Moreover we consider tariff revenues as percent of imports, tar_{jt}, which we interpret as a proxy for trade costs, and a common border dummy, $combord_{ij}$, as potential determinants of FDI. Our primary interest is on the effects of the labor market related variables contained in Z_{jt}. Again, depending on the specification we estimate, Z_{jt} includes a proxy for unit labor costs, ulc_{jt} and for employment protection legislation. Concerning the latter we distinguish four variables: epl_{jt} which represents the summary indicator of the strictness of employment protection legislation and three indicators which capture more narrowly defined aspects of employment protection, namely, protection against collective dismissals, $colldis_{jt}$, regulation concerning temporary contracts, $temp_{jt}$, and the regulation of regular contracts, reg_{jt}.

To test the hypothesis that labor market rigidities impose adjustment costs which become especially relevant in uncertain or risky environments as argued in Haaland et al. (2002), we also estimate a specification where $risk_{jt}$ (lagged) is interacted with epl_{jt}, $(epl * risk)_{jt}$. Since labor market rigidities may hamper FDI flows especially in the case

of high unit labor costs, we also estimate a specification where ulc_{jt} (lagged) is interacted with epl_{jt}, represented by $(epl * ulc)_{jt}$. Finally, λ_t are time dummies, and α_{ij} are country-pair specific effects.

Note that following Bevan and Estrin (2004) and Egger and Winner (2005) we take the log of all variables denominated in euro and use lagged values of all variables except for the proxies for employment protection legislation to guard against the possibility of reverse causality and to take into account that FDI flows to the CEECs may rely on lagged rather than on contemporaneous information. We use contemporaneous values of the employment protection legislation indicators as these variables vary only slightly over time. Therefore contemporaneous correlations appear to be of minor importance.[4]

The expected signs of the coefficients on the GDPs, on the common border dummy, on the privatization process and due to measurement reasons also on political risk are positive (cf. Table 1). The bilateral effective average tax rate, unit labor costs, inflation and the various proxies for employment protection legislation are expected to enter negatively. While a larger distance between countries may encourage FDI due to high transport costs it may also discourage FDI due to differences in culture and institutions. Thus, a priori the sign on the distance coefficient is ambiguous. However, we expect a negative sign for several reasons (see also Bellak et al., 2007). First, intra-firm trade flows between parent and affiliate tend to be high in the case of efficiency seeking FDI and the costs of re-exporting are an important determinant of overall cost.[5] Second, a large distance will impact negatively even on market-seeking FDI if affiliates are relatively new, since they typically depend on headquarter services and intermediate inputs supplied by the parent. Thirdly, the negative impact of distance on FDI has been shown by the vast majority of empirical studies.

The impact of high tariffs on the volume of FDI received by a country depends on the underlying motive for FDI, efficiency or market seeking FDI. In the former case FDI may be deterred by high tariffs and in the latter case high tariffs my spur FDI ('tariff-jumping FDI'). Thus, the sign of this variable is ambiguous a priori. For reasons similar to those

[4]Similar results, which are available upon request, are obtained with one-period lagged values of the employment protection variables.

[5]For a classification and discussion of different types of FDI flows, see (Barba Navaretti and Venables, 2004, p. 30f).

outlined above for distance we also expect tariffs to enter negatively.

To estimate equation (1) we use data obtained from various sources. Details on data sources are provided in Table 1. The FDI data are denominated in millions of current euros and are mainly taken from Eurostat's 'New Cronos' database, the 'OECD International Direct Investment Statistics Yearbook' and the 'OECD Foreign Direct Investment' database. Missing values are substituted by information from National Banks (in particular the De Nederlandsche Bank and the Croatian National Bank) and National Statistical Offices (in particular the Office of National Statistics in the UK and the Bureau of Economic Analysis).

As an indicator for labor market rigidity we use data on employment protection legislation for which our principal data sources are OECD (2004) and OECD (1999). For Slovenia, Bulgaria and Croatia the data are obtained from various sources (cf. Table 1). However, in any case the indicators were constructed based on the methodology outlined in OECD (1999) and are therefore comparable to the data provided directly by the OECD. Each of the subindicators mentioned above ($colldis_{jt}$, $temp_{jt}$ and reg_{jt}) is based on a weighted average of different variables, as for instance the definition of collective dismissals, the maximum number of successive contracts allowed, the duration of severance payments or notification procedures. In total 18 variables are included in the summary indicator, epl_{jt}, which itself is a weighted average of the subindicators. These 18 variables are based on several national sources, multi-country surveys and information provided by national governments (see Ochel, 2005, for details). Each indicator ranges between zero (lowest possible employment protection) and six.

(Table 1 about here: Definition and Sources of Variables)

In 2003 the US, Canada, the UK, Ireland and New Zealand show the lowest values for epl_{jt} ranging from 0.7 to 1.3 (OECD, 2004). Table 2 shows the values for the CEECs in 2003. Bulgaria turns out to the country with the highest level of employment protection among the CEECs included in our sample. Also Croatia and Slovenia show values which are similar to what we observe in Germany (2.5) and France (2.9) for instance. Overall, the four CEE-OECD member states are among the least restrictive EU-countries. It has

to be noted, that many CEECs reformed their employment protection legislation in 2003, with Croatia, Slovakia and Slovenia relaxing their provisions substantially (OECD, 2004; Ignjatovic, 2006; Bejakovic, 2006) and Poland and Bulgaria tightening their provisions somewhat (OECD, 2004; Micevska, 2004). Also note, that besides showing substantial heterogeneity across the CEECs, Table 2 also reveals heterogeneity across the employment protection indicators for a given country. Notably, the Czech Republic and Slovakia have relative strict protection of regular wage contracts whereas temporary contracts are only weakly regulated. For Poland we observe strong protection against collective dismissals with a relatively low value of the summary indicator.

(Table 2 about here: Employment Protection Legislation in 2003)

Tables 3 and 4 show the correlation matrix and descriptive statistics of the variables used. Two issues arise: First, the explanatory variables may be subject to multicollinearity. Although the correlation coefficients seem to be sufficiently low in most cases, there are some exceptions, e.g. the correlation between $risk_{jt}$ and tar_{jt}. Therefore we take this potential multi-collinearity into account in our estimation by stepwise dropping multi-collinear variables and analyzing the impact on sign and significance of other variables. And second, Table 4 shows that the between country-pair variability is much higher than the within country-pair variability. Thus, an estimator which does not drop all of the former variability (e.g. the random effects or the Hausman-Taylor estimator) might be especially suitable for the dataset at hand.

(Table 3 about here: Correlation matrix)

(Table 4 about here: Descriptive statistics)

4 Estimation Results

A general-to-specific estimation strategy leads to the elimination of several control variables.[6] In particular, tariffs, political and macroeconomic risk and the common border dummy are not statistically different from zero. Concerning tariffs this result is as expected since tariffs have been very low throughout the period considered. The same applies to political and macroeconomic risk. The insignificance of the common border variable is due to the inclusion of the head-to-head distance, $\log dist_{ij}$, as additional regressor.

The second column of Table 6 displays the estimation results for our baseline specification. We estimate equation (1) as a random effects model which is supported by the Hausman-test. The gravity variables enter with the expected sign and turn out to be significant at least at the 10 percent level.[7] Moreover, point estimates are similar in magnitude to those reported in the literature. The tax rate has a negative impact on FDI flows, whereas the privatization process tends to increase FDI.

Turning to the labor market related variables,unit labor costs are negatively and highly significantly related to FDI flows. As expected, labor costs are clearly an important determinant of FDI flows into transition economies. In contrast, the summary indicator for employment protection legislation is negatively signed as expected but turns out to be statistically insignificant.

Columns three to five of Table 6 show the results for the various subindicators of employment protection legislation. Our results are robust with respect to different indicators. The impact of employment protection legislation on FDI is not significantly different from zero regardless of the proxy for employment protection in question. Note, that for reg_{jt} the Hausman-test rejects the null hypothesis of random effects and we therefore present results from the fixed effects estimation in this case. Again, we find an insignificant impact of labor market flexibility on FDI.

As an additional robustness check we re-estimate the baseline specification using the Hausman-Taylor estimator. As argued in Egger (2004), $\log dist_{ij}$, might be correlated

[6] To preserve space we do not report details for this preliminary analysis. Full estimation results are available upon request.

[7] All estimated standard errors are robust to the presence of arbitrary heteroscedasticity. Serial correlation is not any issue as shown by the AR(1) values in the Tables.

with the α_{ij}. In addition, the effective average tax rate, $beatr_{ijt}$, which varies along the country-pair dimension, is prone to be correlated with α_{ij}. Hence, we consider $\log dist_{ij}$ and $beatr_{ijt}$ as correlated with the country-pair effects in the Hausman-Taylor estimation. The last column of Table 6 shows the results. We see that our results are also robust with respect to the estimator used. As expected (see Egger, 2004) the coefficient on $\log dist_{ij}$ increases in absolute value and the coefficient on $beatr_{ijt}$ drops towards the fixed effects estimate.[8]

(Table 6 about here: FDI and Employment Protection Legislation)

Table 7 contains several further robustness checks. The effect of omitting unit labor costs, which is common in the existing literature, is shown in the second column. Indeed, when ulc_{jt} is dropped, epl_{jt} enters negatively as before, becomes statistically significant and the estimated coefficient increases substantially in magnitude. Moreover, the coefficients on the remaining variables remain unchanged compared to the second column of Table 6. Thus, it appears that the explanatory power of ulc_{jt} is captured by epl_{jt} to some extent, which is not implausible as these two variables probably carry joint information about labor market conditions. Specifically, institutional aspects like strict employment protection legislation might influence wage negotiations and therefore any effects exerted by labor market institutions are already contained in bargained wages. Consequently, differences in employment protection legislation across the countries in our sample also manifest themselves in differences in unit labor costs.

To check whether the impact of employment protection legislation is already be contained in ulc_{jt}, we proceed by eliminating common effects of ulc_{jt} and epl_{jt} from the former variable. We follow Benassy-Quere et al. (2007a) and proceed in two steps: First, we regress ulc_{jt} on epl_{jt} using the fixed effects estimator, and second, we include the estimated residual of this regression, $ulcgenuine_{jt}$, instead of ulc_{jt} in our baseline specification. If epl_{jt} influences FDI inflows indirectly via ulc_{jt}, one would expect epl_{jt} to enter significantly in this modified specification.

Results are shown in column three of Table 7. Although the significance of epl_{jt}

[8]Using the fixed effects estimator, the point estimate of the coefficient on $beatr_{ijt}$ is about -0.04 and is highly statistically significant.

increases somewhat, the negative impact remains statistically insignificant. Again, the coefficients of the remaining variables hardly change. The coefficient of $ulcgenuine_{jt}$ is larger in absolute value than the various estimates shown for ulc_{jt} derived from the random effects estimator. Actually the coefficient of $ulcgenuine_{jt}$ is closer to the coefficient of ulc_{jt} derived from the inefficient fixed effects estimator (not shown). This is not unexpected as we have purged fixed effects from ulc_{jt} in the first stage regression. Summing up, this exercise stresses the fact that employment protection legislation does neither exert a direct effect nor an indirect effect, via ulc_{jt}, on FDI in the CEECs included.[9]

To explore the possibility that employment protection legislation matters only in countries with relatively high unit labor costs we interact epl_{jt} with (lagged) ulc_{jt}. Results are shown column four of Table 7. The coefficients of epl_{jt} and on the interaction term are not significantly different from zero.[10] Hence, our result do not suggest that country risk matters in this context.

Finally we analyze the possibility that labor market rigidities are more relevant in relatively risky countries along the lines of Haaland et al. (2002). We add the political risk level (lagged) of the host country, $risk_{jt}$, as an explanatory variable and also interact it with epl_{jt}, $(epl * risk)_{jt}$. From the fifth column of Table 7 we see that epl_{jt} is not significantly different from zero in this augmented specification. Moreover, the marginal effect of epl_{jt} turns out to be insignificant for any level of $risk_{jt}$ considered. Hence, we confirm our previous result that epl_{jt} has no direct effect on FDI flows. In addition, we may now conclude that this results holds regardless of the riskiness of the host country. This result is in line with Görg (2005) who does not find any amplifying effect of the level of riskiness of a host country.

As different country risk indicators usually measure different aspects we provide another robustness check and use the risk indicator of the Political Risk Service Group (PRSG), $icrg_{jt}$, taken from Euromoney instead of $risk_{jt}$. This alternative indicator captures some socio-economic risk aspects not covered by $risk_{jt}$. From the last column of 7

[9] As *ulcgenuine* is a generated regressor bootstrapped standard errors are reported in column three. Specifically, we use a non-parametric bootstrap with 1000 replications (see Wooldridge, 2002, p. 378f).

[10] Note that it is generally possible to obtain a significant impact of the interacted variable even if the coefficients on the variable itself and on the interaction term are insignificant (see Brambor et al., 2006). In our case, evaluating the marginal effect of epl_{jt} on FDI for different values of ulc_{jt} shows that the marginal effect is insignificant for any value of ulc_{jt} contained in our sample.

we see that using the PRSG-indicator does not change our results.

5 Summary

In this paper we study the influence of labor market conditions on FDI flows into a sample of CEECs. In particular we analyze the influence of employment protection legislation as a proxy for the rigidity of labor markets in a broader sense. While we find that FDI flows are significantly higher in countries with relatively low unit labor costs, we do not find any significant effects of the degree of employment protection legislation. This latter result is valid whenever unit labor costs are included in the empirical model along with the proxy for employment protection legislation used. The result also is robust with respect to the level of the riskiness of host countries of FDI. Overall, we conclude that rigid labor markets are of limited importance as location factor once unit labor costs are considered.

It appears conceivable that employment protection legislation has some indirect influence upon FDI flows via the wage bargaining process and thus via unit labor costs. Such indirect effects seem plausible, since institutional aspects of the labor market may already be reflected in bargained wages. Although, our results indicate that these indirect effects should be negligible a more detailed analysis of this issue appears to be an interesting direction for future research.

References

Barba Navaretti, G., Venables, A., 2004. Multinational Firms in the World Economy. Princeton University Press, Princeton and Oxford.

Bejakovic, P., 2006. Contribution to the EEO Autumn Review: Flexicurity, Croatia. European Employment Observatory, EEO Autumn Report 2006.

Bellak, C., Leibrecht, M., Riedl, A., 2007. Labour costs and FDI flows to the CEECs: A survey of the literature and some empirical evidence. Structural Change and Economic Dynamics forthcoming.

Benassy-Quere, A., Coupet, M., Mayer, T., 2007a. Institutional determinants of foreign direct investment. The World Economy 30 (5), 764–782.

Benassy-Quere, A., Gobalraja, N., Trannoy, A., 2007b. Tax and public input competition. Economic Policy, 385–430.

Bevan, A. A., Estrin, S., 2004. The determinants of foreign direct investment into European transition economies. Journal of Comparative Economics 32 (4), 775–787.

Brambor, T., Clark, W., Golder, M., 2006. Understanding interaction models: Improving empirical analyses. Political Analysis 14 (1), 63–82.

Carstensen, K., Toubal, F., 2004. Foreign direct investment in Central and Eastern European countries: A dynamic panel analysis. Journal of Comparative Economics 32 (1), 3–22.

Demekas, D. G., Horvath, B., Ribakova, E., Wu, Y., 2007. Foreign direct investment in European transition economies - the role of policies. Journal of Comparative Economics 35 (2), 369–386.

Djankov, S., La Porta, R., Lopez de Silanes, A., Shleifer, A., 2001. The structure of labor markets: Analytical framework, historical background, indices, and preliminary conclusions. Mimeo, World Bank.

Egger, P., 2004. On the problem of endogenous unobserved effects in the estimation of gravity models. Journal of Economic Integration 19 (1), 182–191.

Egger, P., Winner, H., 2005. Evidence on corruption as an incentive for foreign direct investment. European Journal of Political Economy 21 (4), 932–952.

Görg, H., 2005. Fancy a stay at the 'Hotel California'? The role of easy entry and exit for FDI. Kyklos 58 (4), 519–535.

Haaland, J. I., Wooton, I., Faggio, G., 2002. Multinational firms: Easy come, easy go? FinanzArchiv: Public Finance Analysis 59 (1), 3–21.

Ignjatovic, M., 2006. Contribution to the EEO Autumn Review 2006: Flexicurity, Slovenia. European Employment Observatory, EEO Autumn Report 2006.

Javorcik, B. S., Spatareanu, M., 2005. Do foreign investors care about labor market regulations? Review of World Economics 127 (3), 375–403.

Liu, Z., 2002. Foreign direct investment and technology spill over: Evidence from China. Journal of Comparative Economics 30 (3), 579–602.

Micevska, M., 2004. Unemployment and labour market rigidities in Southeast Europe. GDN report, Global Development Network Southeast Europe.

Ochel, W., 2005. Concepts and measurement of labour market institutions. CESifo DICE Report 4, 40–55.

OECD, 1999. Employment Outlook 1999. OECD, Paris.

OECD, 2004. Employment Outlook 2004. OECD, Paris.

Wooldridge, J. M., 2002. Econometric Analysis of Cross Section and Panel Data. MIT Press.

Table 1: Data Sources

Abbreviation	Source	Variable	Expected Sign
GDP_i	Eurostat: New Cronos database	Home country size measured as home country GDP in mn. Euro	+
GDP_j	Eurostat: New Cronos database	Host market size measured as host country GDP in mn. Euro	+
dist	CEPII	Distance between capital cities in kilometers	-
combord	Maps	Common border; Dummy variable: 1 if common border; 0 otherwise	+
priv	Own calculations; EBRD: Transition Reports	Annual privatization revenues in mn. Euro	+
risk	Euromoney	Political Risk; index ranging from 0 to 25 (lowest possible risk level)	+
infl	EBRD: Transition Reports	Inflation measured as the percentage increase in producer prices	-
tar	EBRD: Transition Reports	Ratio of taxes and duties on imports (excluding value added tax) over imports of goods and services; in percent	-
beatr	Own calculations based on Devereux and Griffith 1999; assumptions follow Devereux and Griffith except that we give investment in inventory less (10%) and investment in buildings more weight, as data for the CEECs show that investment in inventories is of minor importance; pre-tax financial flow of 20% is assumed; only corporate income taxes are considered; raw tax data are taken from the European Tax Handbook and KPMGs tax rate surveys (various issues)	Bilateral effective average tax rate; measured in per cent	-
epl	OECD database and OECD 2004, Micevska 2004, Ignjatovic 2006, Bejakovic 2006, Tonin 2005, Riboud et al. 2002	Summary Indicator of the strictness of employment protection legislation	-
colldis	OECD database and OECD 2004, Micevska 2004, Ignjatovic 2006, Bejakovic 2006, Tonin 2005, Riboud et al. 2002	Indicator of the strictness of protection against collective dismissals	-
temp	OECD database and OECD 2004, Micevska 2004, Ignjatovic 2006, Bejakovic 2006, Tonin 2005, Riboud et al. 2002	Indicator of the strictness of protection of temporary contracts	-
epl	OECD database and OECD 2004, Micevska 2004, Ignjatovic 2006, Bejakovic 2006, Tonin 2005, Riboud et al. 2002	Indicator of the strictness of protection of regular contracts	-
ulc	own calculations using data from AMECO and WIIW databases	Real unit labor costs in common currency (Euro) according to equation (1) in Bellak et al. 2007; measured in per cent	-

Table 2: Employment Protection Legislation in 2003

	Czech Republic	Poland	Hungary	Slovenia	Slovakia	Bulgaria	Croatia
epl	1.90	2.10	1.70	2.52	2.00	2.70	2.60
colldis	2.10	4.10	2.90	3.30	2.50	2.60	4.30
temp	0.50	1.30	1.10	2.30	0.40	3.40	1.90
reg	3.30	2.20	1.90	2.70	3.50	2.20	2.60

Notes: For data sources see Table 1.

Table 3: Correlation Matrix

	$\log GDP_i$	$\log GDP_j$	$\log dist$	combord	$beatr$	ulc	$\log priv$	epl	reg	$temp$	$colldis$	$risk$	tar	$infl$	$icrg$
$\log GDP_i$	1.00														
$\log GDP_j$	0.04	1.00													
$\log dist$	0.75	-0.01	1.00												
$combord$	-0.31	0.11	-0.61	1.00											
$beatr$	-0.05	0.12	0.01	0.03	1.00										
ulc	0.02	0.09	-0.06	0.18	-0.30	1.00									
$\log priv$	0.02	0.66	-0.02	0.03	0.07	-0.28	1.00								
epl	-0.01	-0.67	0.00	-0.08	-0.18	0.39	-0.78	1.00							
reg	-0.01	-0.22	-0.21	0.17	0.24	0.30	-0.30	0.35	1.00						
$temp$	-0.01	-0.70	0.12	-0.21	-0.25	0.03	-0.65	0.83	-0.15	1.00					
$colldis$	0.00	-0.07	-0.01	-0.05	-0.24	0.63	-0.39	0.68	0.13	0.42	1.00				
$risk$	0.06	0.62	-0.10	0.25	0.00	0.44	0.46	-0.48	0.20	-0.73	-0.13	1.00			
tar	-0.06	-0.58	0.14	-0.21	-0.13	-0.30	-0.38	0.36	-0.43	0.70	0.00	-0.76	1.00		
$infl$	-0.05	-0.22	0.05	-0.07	0.09	-0.24	-0.06	0.07	-0.19	0.22	-0.14	-0.24	0.30	1.00	
$icrg$	0.00	0.52	-0.08	0.20	0.13	0.27	0.30	-0.58	0.13	-0.72	-0.12	0.65	-0.53	-0.24	1.00

Table 4: Descriptive Statistics

Variable		Mean	Std.Dev	Min	Max
$\log FDI$	overall	4.17	1.86	-1.20	8.44
	between	1.54	1.30	7.26	
	within	1.12	0.53	7.76	
$\log GDP_i$	overall	13.88	1.12	12.12	16.24
	between	1.13	12.20	16.05	
	within	0.15	13.47	14.24	
$\log GDP_j$	overall	10.37	0.85	8.96	12.27
	between	0.83	9.31	11.96	
	within	0.19	9.90	10.85	
$\log dist$	overall	6.94	1.00	4.04	8.98
	between	1.01	4.04	8.98	
	within	0.00	6.94	6.94	
$combord$	overall	0.15	0.36	0.00	1.00
	between	0.35	0.00	1.00	
	within	0.00	0.15	0.15	
$beatr$	overall	33.44	8.43	5.19	56.20
	between	7.53	9.89	50.63	
	within	4.35	16.22	45.75	
ulc	overall	26.98	9.54	11.27	51.90
	between	9.48	15.59	48.07	
	within	1.97	21.70	32.93	
$\log priv$	overall	-0.52	1.37	-2.86	2.13
	between	1.11	-2.42	1.08	
	within	0.83	-3.97	1.53	
epl	overall	2.50	0.73	1.50	3.60
	between	0.71	1.50	3.60	
	within	0.19	1.62	2.68	
reg	overall	2.72	0.65	1.90	3.60
	between	0.65	1.90	3.60	
	within	0.09	2.11	2.92	

Table 5: Descriptive Statistics (continued)

temp	overall	1.85	1.35	0.40	3.90
	between	1.32	0.50	3.90	
	within	0.28	0.10	2.29	
colldis	overall	3.51	1.02	2.10	5.00
	between	1.00	2.10	5.00	
	within	0.22	2.20	3.76	
risk	overall	14.12	3.29	5.32	19.17
	between	2.83	9.03	17.15	
	within	1.68	8.59	18.03	
tar	overall	4.74	4.11	0.50	18.45
	between	3.40	1.15	12.16	
	within	2.33	0.17	13.47	
infl	overall	26.25	125.37	-1.80	971.08
	between	49.98	1.29	171.05	
	within	114.91	-143.39	847.51	
icrg	overall	78.11	4.53	65.67	86.58
	between	3.99	70.50	82.15	
	within	2.68	72.42	84.32	
Obs.	= 355 (for *icrg* Obs. = 300)	N	= 49	T-average	= 7.2

Table 6: FDI and Employment Protection Legislation

Estimator	RE	RE	FE	RE	H-T
$\log GDP_i$	0.33*	0.33*	0.29	0.30*	0.51'
	(1.93)	(1.93)	(0.28)	(1.77)	(1.58)
$\log GDP_j$	0.98***	1.06***	1.80**	0.95***	0.83***
	(3.87)	(5.12)	(2.11)	(3.89)	(3.01)
$\log dist$	-0.69***	-0.69***	dropped	-0.65***	-1.06**
	(-3.84)	(-3.84)		(-3.55)	(-2.47)
$beatr$	-0.06***	-0.06***	-0.04**	-0.06***	-0.04**
	(-4.44)	(-4.54)	(-2.17)	(-4.66)	(-2.15)
ulc	-0.03*	-0.03*	-0.13***	-0.03**	-0.03*
	(-1.77)	(-1.76)	(-3.14)	(-2.45)	(-1.91)
$\log priv$	0.22**	0.24**	0.26**	0.22**	0.23**
	(2.22)	(2.47)	(2.37)	(2.29)	(2.10)
epl	-0.18				-0.22
	(-0.63)				(-0.72)
$colldis$		-0.07			
		(-0.41)			
reg			0.37		
			(0.43)		
$temp$				-0.13	
				(-0.95)	
$obs.$	355	355	355	355	355
$R^2 overall$	0.52	0.52	0.31	0.30	0.67
$R^2 within$	0.22	0.22	0.21	0.22	
$R^2 between$	0.70	0.70	0.40	0.71	
$AR(1) : \chi 2(1)$	0.14	0.13	0.13	0.13	
$H : \chi 2(6)$	7.80	10.08	12.24*	9.66	
$H : \chi 2(4)$					4.25
$TD : \chi 2(7)$	13.81*	13.31*	dropped	14.11**	16.10**

Notes: z-values in parenthesis; RE denotes the random effects estimator and H-T refers to the Hausman-Taylor estimator; AR(1) is the test statistic for testing for serial correlation according to (Wooldridge, 2002, p. 282f); H denotes the Hausman-test test statistic; TD denotes the test statistic for the test of joint significance of time dummies; standard errors are robust for heteroscedasticity; ' / * / ** / *** indicates significance at 15 / 10 / 5 / 1 percent level.

Table 7: Robustness Analysis

Estimator	RE	RE	RE	RE	RE
$\log GDP_i$	0.31*	0.30**	0.33**	0.31**	0.29**
	(1.80)	(2.01)	(1.95)	(2.27)	(2.21)
$\log GDP_j$	0.79***	0.90***	0.97***	0.98***	0.88***
	(3.61)	(4.50)	(3.79)	(4.20)	(3.71)
$\log dist$	-0.66***	-0.65***	-0.70***	-0.66***	-0.69***
	(-3.61)	(-3.70)	(-3.88)	(-4.61)	(-5.39)
$beatr$	-0.05***	-0.05***	-0.06***	-0.06***	-0.05***
	(-4.24)	(-3.81)	(-4.49)	(-4.48)	(-3.27)
ulc			-0.02	-0.04**	-0.04**
			(-0.24)	(-2.17)	(-2.14)
$ulcgenuine$		-0.09**			
		(-2.20)			
$\log priv$	0.22**	0.23**	0.22**	0.21*	0.30***
	(2.25)	(2.12)	(2.21)	(1.87)	(2.62)
epl	-0.44*	-0.29	-0.08	-0.14	0.78
	(-1.87)	(-0.86)	(-0.11)	(-0.19)	(0.28)
$epl * ulc$			-0.00		
			(-0.16)		
$risk$				0.03	
				(0.24)	
$epl * risk$				0.01	
				(0.16)	
$icrg$					0.12
					(1.15)
$epl * icrg$					-0.01
					(-0.18)
$obs.$	355	355	355	355	300
$R^2overall$	0.52	0.52	0.52	0.53	0.54
$R^2within$	0.21	0.22	0.22	0.22	0.22
$R^2between$	0.70	0.70	0.70	0.71	0.71
$AR(1) : \chi2(1)$	0.09		0.16	0.15	1.33
$TD : \chi2(7)$	16.46**	12.29*	13.13*	17.67**	21.72***

Notes: z-values in parenthesis; RE denotes the random effects estimator and H-T refers to the Hausman-Taylor estimator; AR(1) is the test statistic for testing for serial correlation according to (Wooldridge, 2002, p. 282); H denotes the Hausman-test test statistic; TD denotes the test statistic for the test of joint significance of time dummies; standard errors are robust for heteroscedasticity; ' / * / ** / *** indicates significance at 15 / 10 / 5 / 1 percent level.