THE IMPACT OF INSTITUTIONAL QUALITY DEVELOPMENT ON FOREIGN DIRECT INVESTMENT: EVIDENCE OF THE MANUFACTURING SECTOR IN SEE COUNTRIES

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ABSTRACT

This paper basically seeks to assess both empirically and theoretically the significance of institutional infrastructure and its development as a determinant of Foreign direct investment (FDI) stock into South East European countries (SEE) in a manufacturing sector. By providing empirical evidence, it intends to show that the upgraded quality of institutional development is significantly and positively related to FDI into the SEE countries. The paper measures institutional development based on a series of indicators of the progress of the transition process constructed by European Bank of Reconstruction and Development (EBRD). Using panel dataset for the period 1999 to 2006 we constructed an econometric model that was used to estimate the determinants of FDI on sectoral level. Econometric analysis used OLS with panel-corrected standard errors (PCSEs). Our analysis indicates that general measure of institutional development is statistically significant and confirms that the overall quality of the institutions attracts FDI in manufacturing sector in SEE region. The descriptive analysis reveals that most SEE countries managed to attain standards and performances typical of advanced industrial economies only in the areas of Price liberalization and Trade & Forex system, while in all the other observed areas of institutional progress (Large scale privatisation, Small scale privatisation, Enterprise restructuring, Competition policy, Banking reform & interest rate liberalisation, Securities markets & non-bank financial institutions, Overall infrastructure reform and Telecommunications) SEE countries are at different stages of designing, adopting and implementing their institutional reforms. Thus, it can be deduced that the quality of institutional development is still poor, and that significant efforts need to be made to facilitate institutional development in order to attract foreign investors.

Key words: foreign direct investment, location determinants, South East European countries, manufacturing sector, panel data

1. INTRODUCTION

Foreign direct investment (FDI) is now a fundamental driver of the international economic system and a catalyst for development. The benefits of FDI include technology transfer, skill development, and increased employment, tax revenues, exports and capital investment. Foreign direct investment inflow in transition countries triggered numerous debates and studies on FDI determinants in these states. The use of different explanatory variables in FDI determinant studies is due to the fact that FDI is a complex economic category dependent on numerous factors, the comparative significance of which can change in accordance with the economic environment development over time; a change in a recipient country's economy

may also bring about a change in FDI determinants (UNCTAD; 1998). Although traditional determinants do not disappear due to globalization, their significance diminishes, while determinants such as institutional development and structural reforms gain in significance. In this context, the paper is aimed at analyzing the influence of various dimensions of the institutional framework on FDI.

The extensive research into the nature and determinants of FDI in transition economies has paid little attention to the study of FDI determinants in SEE countries, primarily due to a lack of comparable data. For these reasons, the paper attempts to fill the gap in the current debate on the relationship between the institutional infrastructure development and FDI in SEE countries on the sectoral level, in the period 1999-2006. Our central hypothesis is that countries with more developed institutions for market economy also have a greater FDI stock in the manufacturing industry. The paper is organized as follows. Section 2 discusses the theoretical context of FDI determinants from the host economies' perspective. Section 3 discusses variables and methodology used in the paper. Section 4 offers the panel regression results and descriptive analysis while Section 5 discusses conclusions.

2. THEORETICAL FRAMEWORK

In his attempt to answer the question as to why, how and when FDI will occur, Dunning merged different FDI theories into the so-called OLI theory. The eclectic theory postulates that three conditions are essential for a FDI. The first condition is that the firm must have a net ownership advantage over the other firms serving the foreign market. This ownership advantage may be a product or process differentiation ability, a monopoly power, a better resource capacity or usage, or an exclusive, favored access to product markets etc. The second condition requires that the firm prefer internalizing its ownership advantages rather than externalizing them. This means that the firm possessing ownership advantages must deem producing abroad more profitable than selling or leasing its activities to foreign firms. A firm might prefer internalizing its ownership advantages in order to protect the quality of its products, to control supplies and conditions of sales of inputs, to control market outlets. Finally, the firm enjoying an ownership advantage and an internalization incentive will produce abroad only if there are abroad location advantages such as cheaper labor, higher labor productivity, market access etc. (see Dunning and Buckley, 1977; Dunning 1988). The ownership, location, and internalization (OLI) advantages are not static. They may change over time. Location determinants are the only group of determinants that the host country governments can directly affect.

Dunning (2005) also included factors related to institutions and institutional infrastructure in the existing eclectic paradigm, consequent to the impact of globalization and aims of the New Paradigm Development (NPD). He identified three generic groups of factors that can influence FDI inflow: frameworks of policies and strategies for FDI, economic determinants and business exemptions. As classified, the institutionally related determinants are spread over each of the three groups. The group of FDI-related policies and strategies includes policies for market functioning and structure, bilateral agreements on FDI, privatization, industrial policies, etc. The economic determinants group was expanded with the availability, quality and cost of skilled labour, membership in regional integration agreements, market institutions' quality, quality of managerial and other creative resources, physical infrastructure, etc., while the business exemption group includes investment incentives and promotion, legislation quality and intellectual property protection, good institutional infrastructure and support (banking, accounting jobs, and other services), social capital, regional clusters and networking. The above framework of FDI gives guidance in identifying the set of economic and institutional variables to be tested as determinants of investment locations, which is discussed in detail in the next section.

3. MODELLING AND DATA

The empirical framework employed in the analysis involves the use of a single equation model for testing the relationship between FDI and institutional infrastructure. The model regresses the FDI data on a measure of institutional development, and a set of control variables. The dependent variable in the paper is FDI stock per capita[1], NACE 1-digit in the manufacturing sector for each observed SEE country in the period 1999-2006. Due to the lack of data for SEE countries, we took a particular effort to attempt to create a relevant database of FDI in the manufacturing sector of the observed countries, which can serve the goals of this analysis. Most FDI data were taken from the Vienna Institute for International Economic Studies (WIIW) database. Data that were missing for certain years were added based on the author's calculations and estimates founded on the data collected from various sources.[2]

The concept of locational advantages captures properties of host locations that make them attractive to potential foreign direct investors (Dunning; 1958, 1998). The paper measures institutional development based on a series of indicators of the progress of the transition process constructed by EBRD (Bevan at al, 2004). We construed the institutional index (INST) as the unweighted average of the ten EBRD indicators (Large scale privatisation, Small scale privatisation, Enterprise restructuring, Price liberalisation, Trade & forex system, Competition policy, Banking reform & interest rate liberalisation, Securities markets & non-bank financial institutions, Overall infrastructure reform and Telecommunications) for each observed country. The bigger the index is for a country, the more advanced it is in regard to reforms in the seven areas. The expected sign for this variable is positive.

In order to ensure that we are able to obtain unbiased econometric estimates, our analysis controls for a number of factors that the existing literature has identified as important determinants of FDI. A set of control variables (market size, input cost, macroeconomic stability and openness) are intended to capture those structural characteristics of the host economy that may attract FDI.

Most empirical studies on FDI in transition countries suggest that most enterprises in these countries invest in order to find new markets for their products, regardless of the industry the investment is made in (Lankes and Venables; 1996). Our model includes GDP per capita which is a proxy for the purchasing power of local consumers (local demand) and market size. We expect a positive sign for this variable: countries with higher purchasing power of their consumers are expected to attract more foreign investors.

According to the neoclassical theory of determinants, an FDI enterprise can undertake a foreign investment because of the advantage, i.e. lower manufacturing cost in the host economy including the cost of labour, energy and raw materials. The analysis considers wages, as an independent variable, as a proxy variable for input cost. We calculate unit labor costs as the ratio of the annual average wage in each economy to GDP per capita in each economy. In this way, our measure of unit labor cost is effectively a unitless ratio (Bevan et al; 2004).

Successful implementation of economic reforms in transition countries is a good sign to potential investors, since stable macroeconomic performance implies a lower risk for investment. In this context, price stability is a good indicator for host governments' macroeconomic management. The paper therefore approximates macroeconomic stability with the inflation rate. We expect the higher inflation to have a negative effect on FDI inflows in the manufacturing sector, i.e. the coefficient to be negative.

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[1] There are several advantages in working on FDI stocks rather than flows. First, foreign investors decide on the worldwide allocation of output, hence on capital stocks. Second, stocks account for foreign direct investment being financed through local capital markets, hence it is a better measure of capital ownership (Devereux and Griffith, 2002). Finally, stocks are much less volatile than flows which are sometimes dependent on one or two large takeovers, especially in relatively small countries (Quere et al, 2005).

[2] National Bank of Romania, National Bank of Serbia, Foreign Investment Promotion Agency B&H

Liberalization of trade could be closely related to FDI, because it could make the country more attractive for foreign investors. The paper used the shares of imports and exports in the observed countries' GDP as the degree of openness. The expected sign of the coefficient with this variable is positive (depends on FDI form).

Data used for independent variables are mainly those from the United Nations Economic Commission for Europe Statistical Division Database, compiled from national and international (CIS, EUROSTAT, IMF, OECD) official sources, World Development Indicators (WDI) database and Vienna Institute for International Economic Studies (WIIW). Despite the fact that there are different sources for independent variables, the goal was to use data only from a couple of sources in order to avoid problems due to different ways of defining variables and the way of data collection, at least in terms of independent variables. Data for independent variables that were missing in the listed database were complemented by data published by National Statistical Offices of the sample countries. The model we estimated to depict the determinants FDI is as follows:

$$FDIit = \beta\alpha + i + \beta_1 GDPpc_{i(t-1)} + \beta_2 WAGE_{i(t-1)} + \beta_3 OPENESS_{i(t-1)} + \beta_4 INFLATION_{i(t-1)} + \beta_5 INST_{i(t-1)} + e_{it}$$

We used a panel data set covering seven South East transition economies[3] between 1999 and 2006. Data were not available for all the seven countries for all the years, and the dataset is therefore "unbalanced". Since a change in any independent variable may take some time to affect FDI, we lag all independent variables by one year. Since the all variables are expressed in logs, the estimated coefficients should be interpreted as elasticities.

Given the longitudinal nature of the dataset, we begin by estimating equation (1) with country fixed effects model (FEM)[4]. Use of pooled data in econometric analyses frequently leads to certain complications (Hicks; 1994, 171-72). First, errors tend to be no independent from a period to the next. In other terms, they might be serially correlated, such that errors in country i at time t are correlated with errors in country i at time t+1. Second, the errors tend to be correlated across nations. They might be contemporaneously correlated, such that errors in country i at time t are correlated with errors in country j at time t. Third, errors tend to be heteroschesdastic, such that they may have differing variances across ranges or sub sets of nations. And fourth, errors may contain both temporal and cross-sectional components reflecting cross-sectional effects and temporal effects. In other words, even if we start with data that were homoschedastic and not auto-correlated, we risk producing a regression with observed heteroschestastic and auto-correlated errors. This is because heteroschedasticy and auto-correlation we observe is a function also of model misspecification. It is for this reason that we applied tests for checking the presence of heteroschedasticity and auto-correlation. First, a modified Wald test for groupwise heteroskedasticity in fixed effect regression model reveals the presence of heteroscedasticity which, while leaving coefficient estimates unbiased, can significantly influence standard errors and therefore affect hypothesis testing. There are a number of statistical techniques that can address this problem (e.g. weighted least squares), but their applicability and implementation are less clear in a panel context (Podesta; 2000).

In addition to heteroscedasticity, the estimates using FEM model are also affected by serial correlation. In particular, a Woolldridge test for autocorrelation in panel data rejects the null hypothesis of no first order serial correlation. Consequent to the previously described problems, both Parks-Kmenta method and Beck and Katz's (1995) proposal are alternatives. They represent two different approaches to tackle the complications of serial correlation, contemporaneous correlation and heteroscedasticity. Beck and Katz show that the overconfidence in the standard

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[3] Albania, Bosnia and Herzegovina, Bulgaria, Croatia, FYR Macedonia, Romania, Serbia and Montenegro

[4] Results for FEM model is not presented due to space limitations

errors makes the Parks-Kmenta method unusable unless where there are more time points than there are cross-section units. In other words, they recommend using Parks only when T is very large relative to N, which is not the case in this paper (T is almost identical to N). Nevertheless, Beck and Katz (Beck and Katz; 1995) showed that these approaches significantly underestimate the variability of the estimated coefficients, especially if the sample size is small. In this study, we followed the suggestions of Beck and Katz and estimated OLS with panel-corrected standard errors (PCSEs) using Prais-Winsten to take into account the AR(1) process.

4. RESULTS

In Table 1. we report the results of panel regression model.

Table 2: Panel regression results

	Model
GDP_pc (t-1)	1.300***
	(0.320)
Wage (t-1)	-0,572
	(0,466)
Openness (t-1)	0,739**
	(0,353)
Inflation (t-1)	-0,014
	(0,028)
INST (t-1)	3,220**
	(1,441)
R-sq	0,95
Prob>chi2	0,000
Wooldridge test for autocorrelation in panel data (Prob>F)	0,002
N	42

Source: Authors' calculations
Note: Robust standard errors in parentheses. Asterisks indicate variables whose coefficients are significant at the 10%(*), 5%(**), and 1% (***) level, respectively. All regressions include a constant and country dummies (not reported in the table).
  There is no precise counterpart to R^2 in the generalised regression model. The R^2 from the transformed model is purely descriptive (see Greene 1999:467).

Turning first to the results for the control variables, we note that the variables display the correct sign. FDI is positively related to GDPpc and is statistically significant at the 1% level. Therefore, larger markets, which recorded faster economic growth, offered better opportunities for manufacturing industries to make use of their ownership advantages, which in turn led to a greater FDI inflow into this sector. Surprisingly, wages are insignificant although they have the expected sign. A possible explanation for the obtained results can be found in the use of average wages in the analysis, rather than the wages in the manufacturing industry, since such data are not available for all the observed countries. Inflation as an approximation variable of macroeconomic reforms success has also the expected negative relationship with FDI flows, although it is not statistically significant. This should not undermine the importance of price stabilization in the transition period. It is perceived that stabilisation programmes were successful so that inflation is no longer seen as a possible impediment to FDI inflow. Openness is a significant and exerting a positive influence on the FDI in the manufacturing sector in SEE countries. A positive estimated coefficient for this variable can be interpreted as evidence that FDI is used to serve other markets and not only the market of the host country.
The most important result in model is that the establishment of institutions for market economy significantly increases FDI inflows in manufacturing sector in SEE region. The result is highly statistically significant having in mind the relatively short period of

observation. In the context of obtained results, the relationship between institutional development and FDI can be viewed as a channel through which institutions promote the growth of productivity. Developed institutions and progress in transition can have a positive influence on development through promotion of investment.

With respect to the obtained results of econometric analysis and the established positive connection between FDI and institutional development, we tried to determine, using descriptive analysis of EBRD indicators for the observed countries, to what extent the observed SEE countries progressed in their institutional development, and which areas require further efforts in order to improve institutional framework. According to Graph 1 (see Appendix 1), most SEE countries managed to attain standards and performances typical of advanced industrial economies only in the areas of Price liberalization and Trade & Forex system. It can be concluded that in all the other observed areas of institutional progress (Large scale privatisation, Small scale privatisation, Enterprise restructuring, Competition policy, Banking reform & interest rate liberalisation, Securities markets & non-bank financial institutions, Overall infrastructure reform and Telecommunications) SEE countries are at different stages of designing, adopting and implementing their institutional reforms. On average, the poorest improvement in the institutional progress quality in these countries was registered in the field of Competition Policy and Securities markets & non-bank financial institutions, which is not surprising as transition economies typically have a relatively high degree of market concentration, significant state ownership and weaker legal frameworks for competition, which combine to limit new investment, and underdeveloped non-bank financial institutions. Finally, it is interesting to note that the infrastructure sector underwent a restructuring process through the establishment of sector regulators, privatisation of state companies and opening of domestic markets to competition, which in turn raised the quality and accessibility of infrastructure in SEE countries, and that this aspect has likely become a smaller obstacle for FDI.

5. CONCLUSION

Our analysis presented in this paper indicates that general measure of institutional development, proxied by the INST variable, is statistically significant and confirms that the overall quality of the institutions attracts FDI in manufacturing sector in SEE region. The impact of institutional progress on FDI confirms that traditional variables cannot fully explain FDI in the SEE region, and that institutionally related variables should be attached a particular significance in future research. The descriptive analysis reveals that most SEE countries managed to attain standards and performances typical of advanced industrial economies only in the areas of Price liberalization and Trade & Forex system, while in all the other observed areas of institutional progress (Large scale privatisation, Small scale privatisation, Enterprise restructuring, Competition policy, Banking reform & interest rate liberalisation, Securities markets & non-bank financial institutions, Overall infrastructure reform and Telecommunications) SEE countries are at different stages of designing, adopting and implementing their institutional reforms. Thus, it can be deduced that the quality of institutional development is still poor, and that significant efforts need to be made to facilitate institutional development in order to attract foreign investors.
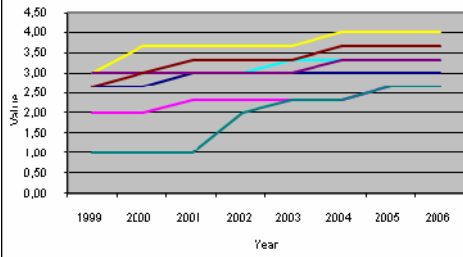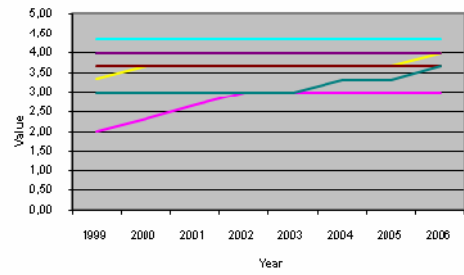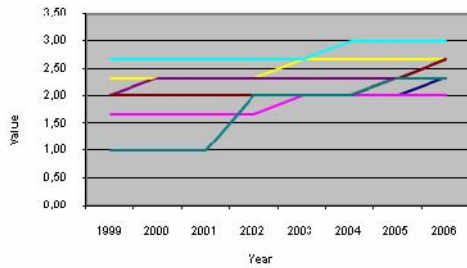
APPENDIX 1.
Graph 1: Descriptive analysis
Legend

Source: EBRD, Transition report 2006: Finance in transition,
http://www.ebrd.com/country/sector/econo/stats/tic.xls (31/01/09)
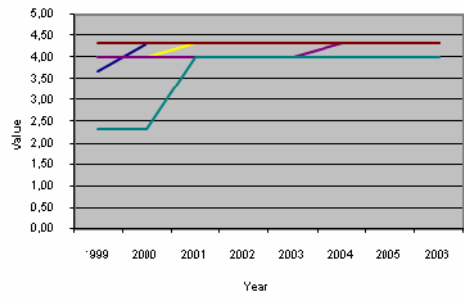
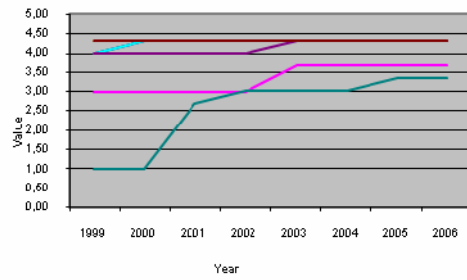## Large scale privatisation
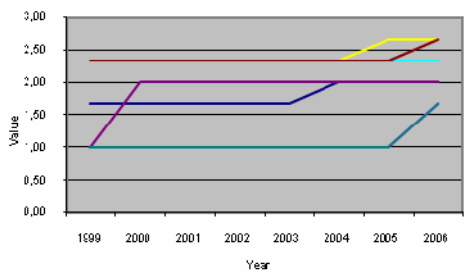
Small scale privatisation

Enterprise restructuring
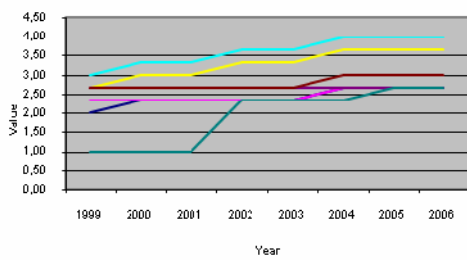
Price liberalisation
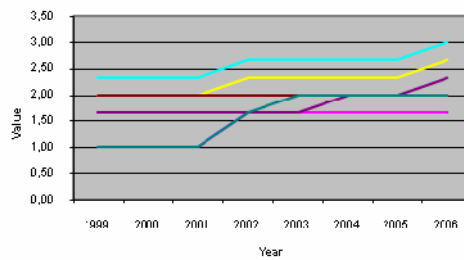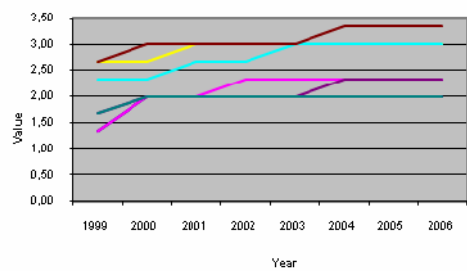
Trade & Forex system

Competition Policy

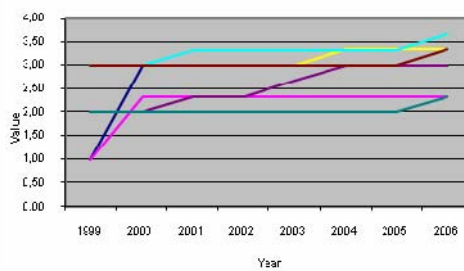## Banking reform & interest rate liberalisation

Securities markets & non-bank financial institutions

Overall infrastructure reform

Telecommunications

239

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