Determinants and role of foreing direct investment in transition economies:with special look in FYR of Macedonia

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Abstract

The aim of this paper is to provide clear insight about the determinants and role of FDI in transition country with particular reference in FYR of Macedonia. We are using a panel dataset for twenty seven - 27 transition countries over the period 1997 to 2009. Applying static and dynamic modeling, econometrics findings have driven as to dynamic models. Inthe same empirical investigations following variables have been tested: GDP of the host and source country, unit labour cost, trade inflation, legal environment, distance, dummy variables capturing the language, common border and colonizing effect. Empirical result confirms expectation of the chosen variables as well as the positive feedback effect of past FDI onto current FDI. While the negative and significant coefficient of distance indicates that FDI is determined by gravity factors, the positive relationship between FDI stock and unit labour cost is explained through the effect of the service sector on wages.
In addition, countries having higher trading shares attract more FDI.
Low inflation rate as well as efficient legal system should be taken as a good sign for attracting more FDI flows since it has a positive impact on foreign investors. Dummy for English language, which indicates countries where English language is official or widely spoken in that country, have less language difficulties and more FDI flows with FYR of Macedonia.

At the same time, income level of the host country is found to be important determinant for foreign investors. Moreover, FDI role in FYR of Macedonia has been found as crucial in many aspects of country's economic development and sustainability. Apart from accelerated growth, technical innovation and enterprise restructuring, FDI in this transition country gave considerable contribution to the financial potential improvement.

KEYWORDS: FDI in Former Yugoslavian Republic of Macedonia, Determinants and role of FDI, Transition Country, Dynamic Panel Data Estimation

Jel classification codes; *f21 – International investment; long – term pital movements*

1. Introduction

Foreign direct investment (FDI) is taken as one of the key factor of rapid economic growth and development in transition countries which seems to suffer from structural weaknesses (low productivity, low employment, social exclusion, constrained competitiveness) and unsustainable economic growth. FDI has a positive impact on the economies of host countries. There are tangible effects and intangible effects. The fact that (FDI) plays an important role in growth and development is uncontested. It is believed that the rapid growth of FDI, mainly taking place in the 1990s, stimulates domestic investment, human capital, and transfers technology by bringing host countries capital, productive facilities, new jobs, management expertise, marketing skills, improving infrastructure and general business climate (Moosa, 2002, p.3). Furthermore, direct investment flows are shown to be the most dependable source and the least volatile source of foreign investment particularly for developing countries (Lipsey,2000). Namely, FDI became the most important among the external capital sources (FDI, external loans, and portfolio investments) because of the difficult access of the transition countries to external loans and as a result of insufficient development of a financial market (Serbu, 2005). Overall, OECD (2002), has summarized the main benefits that FDI confers on the recipient country in the following points: bring financial resources, financing external account deficit, transfer of managerial skills and advanced technical expertise (know-how), active spillovers of technologies, managerial experience and skills, access to export markets ect.

However, it is important to note that foreign direct investment flows not always generate positive productive spillovers to domestic countries. In fact, positive spillovers are more likely to be detected from countries with a relatively high level of absorptive capacity (in terms of human capital, quality of governance etc.) which in turn allows countries to take advantage of financial globalization (Borenzstein et al. 1998). For this reason we have tried to find the determinants which have a directly and inderectly influenced the transition countirs economy. According to the UNCTAD (1996), as a consequence of the globalization of the world economy, investment incentives have become more significant determinants of foreign investments and few countries compete for foreign investment without any form of subsidy. It is a matter of debate, however, whether incentives and subsidies are really justified. A crucial problem relates, for example, to the competition between governments to attract direct investments by removing restrictions on the activities of multinational enterprises with potentially harmful consequences on the host economies. Even though FDI may affect economic growth, through its impact and capital stock, transfer technology, skill acquisition or market competition FDI and growth may exibit a negative relationship. Namely, if there is a inflow of FDI leading to increased monopolization of local industries, thus compromising efficiency and growth dynamics especialy in cases when the regime is corrupted and multinational corporations happen to be related to one of the corrupt leaders (McGee, 2003). It is often argued that FDI results in a loss of sovereignty, in distributional changes between labour and capital; it can reduce employment through divestment and closure of production facilities etc (Moosa, 2002). Moosa alos adds that FDI raises income and social welfare in the host country unless there are distortions caused by protection, monopoly and externalities.

Therefore, it is important transition countries to pay attention to a particular structural reforms leading to stable and working market economy, implementation of an appropriate and transparent legal framework for business environment, recovery and maintenance of the obsolete capital stoke, restructuring the industrial base through privatization programmes since are likely to lead to an increased volume of foreign investments and rapid European integration (Almonte and Guagliano,2003).

The purpose of this study is to capture the common determinants of FDI, as examined by many recent empirical studies, through the gravity model. Even though this model is typically applied to explain bilateral trade flows, it has also proved to be empirically successful in explaining FDI flows, especially when the studies are based on eclectic theories. This study is relevant for FYR of Macedonia since there is a long term attempt to attract more FDI as an alternative source for sustainable economic development and regional competitiveness which in turn will contribute to possible accession in the European Union. The Balkan counties in transition, in particular FYR of Macedonia, have been far less successful in attracting FDI as compared to more advanced transition countries in Central Europe as well as western Balkan. Political instability in the region, traditionally low level of intraregional trade, relatively small size of the markets and high level of corruption have deterred foreign investors from investing in FYR of Macedonia (Slavevski and Nedanovski, 2002). For this reason we have considered that is important to highlight the common determinates and role of FDI in this country.

This study includes five sections organized in the following order. The second section provides a brief inside in to the literature review. The third section includes empirical estimation and results followed by the fourth section focused on the role of FDI in transition countries. The study is summarized in the fifth section giving conclusions and possible extensions.

2. Theoretical framework

In general, there is no single framework but rather number of competitive theories with varying degrees of power in explaining FDI (see e.g. Hymer (1960); Caves (1982); Buckley and Casson (1976)) without providing agreed model as a basis for empirical work. For this reason Agarwalb (1980) and Moosa (2002) treat them as hypotheses leading researchers to rely on empirical evidence for explaining the emergence of FDI.

Moosa (2002) classifies theories of FDI based on the assumption of perfect markets and theories assuming imperfect markets. In the first group Moosa (2002) analysis three hypothesis: the differential rates of return hypothesis; the diversification hypothesis; and the output and market size hypothesis. On the other hand, under theories assuming imperfect markets Moosa (2002) includes the following hypothesis: the industrial organization hypothesis; the internalization hypothesis; the location hypothesis; the eclectic theory; the product life cycle hypothesis; and the oligopolistic reactions hypothesis.

On the other hand, the Eclectik Theory otherwise known as Dunning's (1974, 1981) *OLI paradigm* has provided a taxonomic framework for most estimating equations. Dunning proposes that FDI can be explained by three categories of factors; ownership advantages (O) for firms to operate oversees, such as intangible assets; locational

advantages to investment in the host rather than the donor country (L), and the benefits of internalisation (I). The work on FDI into transition economies has focused primarily on locational advantages of the region (see e.g. Resmini (2000)). According to Dunning (1998) the eclectic paradigm is still a useful general framework as well as robust one for explaining the economic rationale of international production and the organizational issues of MNEs activities. Also, he argues that more empirical work will add to the value of this paradigm and will become more policy oriented.

In order to go through theory into practice, we have used Gravity modeling method which gave us the possibility to capture the common determinants of FDI, as examined by many recent empirical studies. Gravity model is one of the most used methods that analyses the importance of factors such as proximity and market size that can transform countries into attractive locations for FDI. According to the gravity model for international trade, the amount of trade between two countries is explained by their economic size (GDP), population (openness), geographical distance and a set of variables that capture common institutional characteristics such as languages, culture, trade agreements, and law system. Even though this model is typically applied to explain bilateral trade flows, it has also proved to be empirically successful in explaining FDI flows, especially when the studies are based on eclectic theories. Yet, even though FDI determinants are often emphasized in many popular debates, the very same are not completely understood, especially in transition countries where particular circumstances of a particular country determine the flow of FDI (Zulfiu, 2008). For the purpose of our research we have adapted gravity modeling by used following variables:

Variables Description
FDI stock
FDI_{ij}^t are bilateral FDI stocks, from the source country *i*, to the host country *j*
GDPi
representing a proxy for the size of source country expressed at current prices in billions of dollars over years. According to the theories, market size as a proxy for product demand is a very important determinant of FDI where we expect a positive sign of the coefficients of both GDP variables.
GDPj
representing a proxy for the size of host counties, expressed at current prices in billions of dollars over years. According to the theories, market size as a proxy for product demand is a very important determinant of FDI where we expect a positive sign of the coefficients of both GDP variables.
ULC
unit labor costs in the host country, calculated as the ratio of the annual average wage to GDP per capita. Lower input costs in the host country should increase the profitability of the firm, which indicates a negative coefficients on ULC_j^t.
trade
measures the openness of the host economy, which is the sum of imports and exports of host country *j* in billions of dollars. As suggested by the internalization hypothesis, Helpman (1984), and many other studies, FDI and the openness of the economy ($trade_j^t$) should be positively related.
Inflation
indicator of a stable macroeconomic environment, measured by the annual average inflation rate. a stable macroeconomic environment should positively influence investment decisions. Here, price stability is the proxy; i.e. the lower the average inflation rate ($inflation_j^t$) is in the host country, the more foreign investment, ceteris paribus, is expected.
Distance
represents the distance between capital cities of source country *i* and recipient country *j* in kilometers (in some cases we have measured distance with cities that are more representative concerning regular economic trade instead their capital cities, eg. Turky we have used Istanbul instead of Ankara). The relationship between FDI and distance is expected to have a negative sign.
Legalenv
institutional development, legal framework, political risk importance where we have included the legal environment (EBRD rating of legal effectiveness) variable, rating from 1 to 4+, where 4+ indicates that commercial laws are reasonably clear and administrative and judicial support of the law is reasonably adequate.
dummy
additional variables such as a common language[1], a common border, or colonizers[2] of the country, are introduced via dummy variables.

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[1]Where, lan1 are the official or national languages and languages spoken by at least 20% of the population of the country (and spoken in another country of the world), namely Macedonian and other Slavic languages, Albanian and Turkish; lan2 is the official English language or the second most spoken language of the country.

[2] Where col1 is the colonizer of the country for a relatively long period of time and with a substantial participation in the governance of the colonized country, which in our case was Turkey, and col2 is the colonizer of the country for a relatively short period of time or with only low involvement in the governance of the colonized country, i.e. Yugoslavia.

3. Empirical Estimation

In order to test the significance of different determinants of FDI in FYR of Macedonia we have used panel data from 1997 to 2009 for twenty-nine source countries[3]. Considering existing empirical studies the estimated model will be consistent with the gravity approach. Bearing in mind the explanation of Bevan and Estrin (2004) the first specification is estimated both in contemporaneous form and with a two-year lag for the independent variables.

$$FDI_{ij}^t = f(GDP_i^t, GDP_j^t, ULC_j^t, trade_j^t, inflation_j^t, distance_{ij}, legalenv_j^t, dummy_{ij}),$$

where, FDI_{ij}^t are bilateral FDI stocks, from the source country i, to the host country j ($j=1,…27$), at a moment t ($t=1997,…,2009$); the source of the data for this variable is taken from wiiw Database on Foreign Direct Investment and converted in US\$ billion. The abbreviation used in the study are given in table 2.

Table2. Summary statistics

Variables	Abbreviation	Standard deviation	Mean value	Min	Max
FDI stock	fdistock	0.09	0.05	8.10e-06	0.54
GDP of source country	GDPi	2365.19	0.05	2.16	14441.43
GDP of host country	GDPj	1.91	5.12	3.44	5.97
Unite labour cost	ULC	0.02	0.04	0.00	0.06
Trade	trade	2.34	4.73	2.85	10.49
Inflation rate	INFL	2.71	2.69	-1.1	8.3
Distance	dis	3407.95	2177.68	155	15485
Legal environment	gdp	0.28	3.09	2.9	4
Dummy for language 1	Lan1	0.42	0.22	0	1
Dummy for language 2	Lan2	0.42	0.22	0	1
Dummy for common border	cbor	0.35	0.15	0	1
Dummy for colonizer 1	Col1	0.19	0.04	0	1
Dummy for colonizer 2	Col2	0.19	0.04	0	1

Dynamic panel models estimate the effects on some observed outcome of other variables of interest, which may be exogenous or potentially endogenous, conditional on both unobserved individual heterogeneity and one or more lags of the dependent variable[4]. Allowing for dynamics in the model seems to be important for getting consistent estimates. In this case the lagged dependent variable is an endogenous variable and all other explanatory variables are treated as exogenous. Applying GMM we account for the potential endogeneity arising from the lagged dependent variable. Using the

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[3] The source countries are: Albania; Australia; Austria; Belgium; Bosnia and Herzegovina; British Virgin Islands; Bulgaria; Croatia; Cyprus; Denmark; France; Germany; Greece; Hungary; Italy; Liechtenstein; Luxemburg; Netherlands; Panama; Russia; Serbia and Montenegro (are taken as one country since most of the databases consider them as one country); Slovakia; Slovenia, Sweden; Switzerland; Turkey; Ukraine; United Kingdom; and United States.

[4] The basic characteristics of the linear dynamic panel model are displayed in the following equation:

$Y_{it} = \beta Y_{i,t-1} + (\alpha i + \mathcal{E}i_t)$. It is a first-order dynamic panel model, because the explanatory variables on the right-hand side include the first lag of the dependent variable ($Y_{i,t-1}$) where the group-specific random effect (α_i) control for all unobserved effects on the dependent variable that are unique to the country and do not vary over time i.e captures specific ignorance about country i and an error that varies all over countries and time ($\mathcal{E}_{it}$) capturing the general ignorance of the determinants of Y_{it}

appropriate instruments for the endogenous variables one can overcome the endogeneity problem. Although Roodman (2006) suggest using lags two and deeper for the endogenous variable in the GMM-style, we can use only one lag in the system GMM, and not include the dummy variables and distance since using two or more lags and all the regressors included in RE increases the number of instruments[5] and too many instruments "*can overfit endogenous variables*" (Roodman, 2006, p.13). Moreover, in RE estimation, the lagged dependent variable is correlated with the compound error term. Because the compound error term has a time invariant component, it influences the dependent variable in each period and hence, must be correlated with lagged values of the dependent variable which conflicts with the basic assumption of linear regression (Creen, 2003). In our case, the error component regression model controls for unobservable characteristics such as *tax policies, corruption, political environment, infrastructure improvement* and so on. According to the literature, there is a high possibility for these to be correlated with some of the independent variables in the FDI stock, e.g. corruption has rather big influence upon FDI inflow and outflow. Many researchers have reviled that countries with high level of corruption have weak FDI. However, recent case studies had research have revealed opposite results where countries with high level of corruption have high level of FDI inflow. When analyzing cross-sectional data with slightly longer time series, difference estimation is considered as more suitable approach. However, in our case system approach is going to be used as more suitable approach since STATA10 didn't calculate the m1 + m2 statistics as well as the Sargan test in Difference model, although all of the coefficients were statistically, individually significant.

Before we go on with system GMM interpretation, two tests for instrumental validity have been used (1) test for first- and –second order serial correlation among the residuals (m1 and m2 statistics**)** and (2) the Sargan test of over-identifying restrictions[6]. According to the diagnostic test presented in table 1, diagnostic results remained constant all the way through. In both cases of extreme maximum possible instruments and minimum number of instruments, the t-statistics for both m1+m2 statistics was high where we accept the Ho for *No* 2nd- order serial correlation. However, at the same time we are also accepting the null (Ho) for the 1st -order serial correlation. We have obtained same results even when we have started to increase the number of instruments.

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[6] Arrelano and Bond (1991) GMM estimation require E $[\Delta\mathcal{E}_{it},\Delta\mathcal{E}_{i,t-2}]=0$ i.e, no second-order serial correlation in the error term of the first differenced equation, where **m2** statistics test the maintained hypothesis (Ho) in the equation above. The **m1** statistics has a subsidiary role by providing information on the robustness of m2 statistics. The m2 statistics is unreliable, i.e, it may fail to reject, if the error term in levels follow a random walk. Thus, if there is first–order serial correlation in the first differenced error term where $0<p<1$, the random walk in the first–order errors is excluded. Therefore, the m1 and m2 statistics require first-order serial correlation and *NO* second -order serial correlation.

Table 3. Interpretation of diagnostic tests for Arrelano and Bover System GMM:

Concerning the Sargan/Hansen test, as second test for instrument validity, too low and too high p-values can be indicative of weak instruments Roodman (2007). Also there is the problem of " to many" instruments where the Sargan test grows weaker the more instruments were tested and becoming unable to reject the null of instrument validity. In our case, p values obtained in most of the cases were above the apparently very high rule of thumb, a threshold of p=0.25. According to the statistics presented in the table only the third case of estimation provided p value was near to the rule of thumb suggested by Rodman, p =0.2050 . Even though we do accept the null of valid instruments we still have to deal with the problem of two many instruments given that there are only 27 groups in our data set and 33 instrument. As discussed too many instruments can over fit endogenous variables and fail to expunge their endogenous components. There are two options in trying to deal with this problem: limiting the lags used in the GMM-style instruments or using command for collapsing instruments available in xtabond2. In this analysis the second approach has been conducted. The numbers of instruments are reported in Table 1, second column.

There is no clear guidance from the literature on how many instruments are "too many" (Roodman, 2009), although >xtabond2< does give a warning when the number of instruments is larger than the number of cross-sectional units. One of the ways to limit the instrument count is by collapsing them, i.e creating instruments for each variable only. Namely, when we "collapse" an instrument set, we create a whole matrix of instruments but a single column vector of instruments, which means that there is only one instrument for all time periods (Pugh, 2004). At the same time there has been a growing evidence that panel data is likely to exhibit cross-sectional dependence which may arise due to spatial dependencies, economic distances, common shocks" thereby causing errors to be " correlated across the entire cross section" (Sarfidis, et al., 2006). The evidence of 2nd - no order serial correlation might imply possibility of no heterogeneous error cross sectional dependence.

Table 4. **The Difference – in Hansen test (C-statistics)**

According to the statistics presented in Table 2, in our preferred model, the system GMM instruments for levels are valid, in which case we can accept the" steady-state" assumption required for system estimation and there is no undue problem with cross-sectional dependence.

The results in all dynamic models in xtabon2 were very similar. The number of instruments has collapsed below the number of groups. Moreover, at the conventional 5% critical value, almost all of the coefficients were statistically individually significant. The significance of the estimated coefficient on the lagged dependent variable is an evidence that fdistock is subject to persistence effects. The coefficient on the lagged dependent variable is greater than one which indicates an explosive growth of fdistock that is expected in these kind of data.

Table 3. Interpretation of the preferred model

Regressors	Coefficient with robust SE	Economic interpretation
FDI stock (lagged)	1.83	On average, the FDI stock in current period is estimated to be 1.83% of the FDI stock in last period (t-1), ceteris paribus (high level of persistency)
GDPi	-4.07	On average, 1 billion dollar decrease of GDPof source country in current period will give 4.07 billion dollars decrease in FDI, ceteris paribus
GDPj	-0.012	On average, 1 billion dollars decrease in GDP of host country in current period will give 0.012 billion dollars decrease in FDI stock , ceteris paribus
ULC	1.84	On average, 1 billion dollars increase in the Unit labour cost in the current period will give 1.84 billion dollars increase in the FDI stock, ceteris paribus
DIS	-0.0002	On average, 1 km increase in distance will give 0.0002% decrease in the FDI stock, ceteris paribus
Trade	0.01	On average, 1 billion dollar increase in the sum of export and import of the host country will give 0.01 billion dollars increase in the FDI stock, ceteris paribus
INFL	-0.0001	On average, 1% point increase in the inflation rate will give 0.0001% point decrease in the FDI stock, ceteris paribus
legalenv	0.06	On average, 1 level increase in the legal effectiveness will give 0.06% point increase in the FDI stock, ceteris paribus
Constant term	0.19	The constant term has no theoretical meaning

4. Role of foreing direct investment

Foreign investment is considered to have played a very important role in more aspects in transitional economies. Even though FDI role and effect hasn't been even in many countries yet it was important. FDI has a positive impact on the economies of host so there are tangible effects (economic growth, increased trade, capital, wages, productivity and so on) and intangible effects (technical and managerial know how, work attitudes, links to foreign markets). Their role is evident in the first phase of passing from centrally planned economies to market economies and also in rebuilding and strengthening the economy. FDI has been seen as mechanism for penetrating in new markets (like export markets), flow of advanced technology, knowledge spillover (imitation, competition, linkages and/or training) and managerial-administrative skills in host country. Moreover the experience of the transition economies and Balkans country shows that FDI tends to be closely linked to rising bilateral trade flows. In this respect, FDI also played their role in the Balance of Payments (on both current and capital account), increasing existing capital stock and creating new job as one of the crucial problems for most countries in transition. For this reason most of the transition countries like to be part of the EU so they can remove the barriers of free capital and to attract more FDI.

Eventhough there is particular interest for FDI in Eastern Europe as well as western Balkan, the level of FDI is still law. FYR Macedonia is one of the counties that again have both political and economic instability, internal conflicts, need for further reforms especially in the judiciary, still complicated administrative processes act. The mention as well as other factors not only restricts the entrants of FDI and but even more, restrict and in a way suffocate the role of the already existing FDI which in turn does not allow for their effects to be seen.

In the following table we have represented part of the FDI's role on country and local level in three aspects: qualitative, quantitative and location.

Table.3 Role of FDI

ROLE OF FDI				
	DIRECT		INDIRECT	
	Positive	Negative	Positive	Negative
Quantitative	Increases the neto-capital and creates new jobs by expanding industry	Purchase of existing capital may induce rational decision resulting in working sites reduction	Creation of new jobs and has a multiple effect in the local economy	Rely on imports and as a result may induce losses of job
Qualitative	Pay higher wages and have higher productivity	Introduction of new practices in the working that are considered undesirable	Benefits from best experiences helps in local firms organization	Forces local firms to be competitive in salary levels
Location	Improve and add some employment, especially in locations that have high unemployment	Concentration in urban areas and contributes regional unbalance	Encourages supplier's firm migration near the foreign manufacturer	Transpose local production, regional unemployment increases when foreign manufacturer produce same products

Source: UNCTAD 2000.

5. Conclusion

This paper analyses the determinants and role of foreign direct investments in transition countries, with particular reference to FYR of Macedonia's performance. Based on data panel analysis and dynamic modeling we found that all of the coefficients were statistically individually significant even though certain variable's signs were not in accordance with our expectations. Even though, both signs of the GDP source country and host country appeared negative, their significance support empirical findings that GDP, as main indicator for macroeconomic development and growth, is one of the main determinates of FDI. The negative and significant coefficient of distance indicates that FDI is determined by gravity factors, as expected.

Moreover, the positive relationship between FDI stock and unit labour stock is explained through the effect of the service sector on wages and the fact that after the first phase of transition the importance of these determinants declines and other factors such as business environment become more important (Demekas et al.,2005). In addition, countries having higher trading shares also attract more FDI. Macedonia has relatively low inflation rate indicating low macroeconomic risk, thus it should be a good sign for attracting more FDI. Also, improving the efficiency of the legal system has a positive impact on foreign investors. Whereas, the dummy for English language, which indicates that countries where the official language is English or is widely spoken in that country, have less language difficulties and more FDI flows with Macedonia. The significance of lagged FDI stock indicating that FDI decisions rely on past, rather than contemporaneous information about the host economies. Over all, the significance of many empirical studieas support the fact the Macedonia as country which has recently completed transition proceses, will remain dependent on medium and long term by foreign capital and special from Foreing Direct Investments, which increases the FDI role in economy even further.

The coefficient of the lagged FDI is contingent to a particular sample period, particular country and particular circumstances. Thus, we will not expect this coefficient to be constant over time. We do not have enough data, not enough variation left in the data after accounting for the lagged fdistock, so we cannot draw any strong conclusions about the impact of the independent variables on the foreign direct investments. These results do not indicate that the dynamic model is the right specification but that there are omitted dynamics on the static model. Moreover, particular signs in front of the coefficients are   not in accordance with the theory. Namely, both signs of the GDP source country and host country were negative. Therefore, all the econometric findings on the determinants of FDI in transition economies using small data sets should be accepted only with caution.

Foreign investment is considered to have played a very important role in more aspects in transitional economies. FDI has a positive impact on the economies of host so there are tangible effects (economic growth, increased trade, capital, wages, productivity and so on) and intangible effects (technical and managerial know how, work attitudes, links to foreign markets).

These conclusions certainly need to be further tested with bigger dataset containing information on FDI flows to transition countries. This study can be further extended in analyzing deeply the benefits and consequences of foreign direct investments in FYR of Macedonia and other transition countries, emphasizing the effect of special economic zones.

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