

Perspectives on FDI in the context of economic crisis

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Abstract. *Over time, ways of investing and the factors influencing this process have continuously evolved. The starting point was traditional trade, moving to export and then finally getting to international investment. Investors, policy makers and researchers have become increasingly concerned with identifying the factors that determine the investment decision and also the conditions that can increase international investment. There are several studies on this topic, and we have chosen to go over the most relevant in the first part of the paper. In the second part we analyze the evolution of FDI before and during the economic downturn, defining specificity and implications for Romania. In the third part of the paper we analyze some measures designed to boost FDI.*

Keywords: foreign direct investment, economic crisis, economic growth.

JEL Classification: F21.

REL Classification: 8B, 8E, 10H.

Introduction

Due to results of studies on several developing countries, foreign direct investments (FDI) are considered a propeller with long-term impact on economic growth. Their determinants and effects have been amply studied by researchers. The role of FDI should be seen not only by quantitative, but also by qualitative perspective because, by their nature, they are important means of financing development, and also sources of technology and know-how transfer beyond national area (Romer, 1993; OECD, 2007).

FDI can generate a large capacity for stimulation and engagement. They bring the potential for greater growth and development in transition economies than in developed ones. They are different from other forms of capital by their nature, the period of engagement, type of commitment and a lower degree of volatility (Barrell and Holland, 2000). For transition countries, this type of investment is a way to achieve goals and remove organizational gaps through techniques brought in (Barrell and Holland, 2000). It is known that "FDI benefits" to host countries can be significant, including knowledge and technology transfer to local firms, jobs, management enhancements, productivity gaps, increased competition and increased access to export, especially origin countries" (Demekas et al., 2005).

Unlike portfolio investment, foreign direct investment are made on medium and long term and are sensitive to factors that influence macroeconomic, political, and institutional stability, indicators related to these issues being particularly significant for investors. A growing number of firms from many countries increasingly extend and invest across borders, so that at this time all economies compete on the factors that influence the patterns of investment, in order to attract more FDI. This increased competition is based on lower volatility compared to other investments (IMF (2007) World Economic Outlook), on the nature and duration of commitment that they imply (Barrell and Holland, 2000), on the fact that they do not bring debt in host countries, so that they are a preferred method of financing current account deficits, especially in developing countries with high deficits. Meanwhile, as markets and economies liberalization is becoming stronger, there are other opportunities that also favor the emergence of new risks for developing countries.

Some researchers argue that FDI contribute more to economic growth and development of a country than other capital flows. Scholars such as Alfaro, L (2003) and Borensyen, Gregorio and Lee (1998) empirically demonstrate that FDI lead to an increase in wealth, not only of countries. One of investors' objectives is to establish commercial relations abroad and to exercise increased influence by branches.

In order to decide on a new location, investors have now come to realize complex studies, seeking advantages to maximize profit and where there such advantages lack, they try to create them by exerting power over governments and influencing certain economic and political decisions. Along with economic and political stability, transparent and favorable regulatory environment regarding foreign ownership and repatriation of profits, are together determinants of the decision on foreign direct investment (Demekas et al., 2005).

The literature devoted to the determinants of FDI identifies besides traditional factors, aspects that refer to politics, country risk and the progress in transition. Traditional factors include market size, natural resources, openness, distance, economic and political stability, skills and culture of workforce. Among political factors we mention market law, employment law, taxation and infrastructure. Yeaple (2009) states that countries with an investment environment that offers many advantages to investors attract a larger number of multinational companies. Hayakawa, Lee and Park (2010) confirm Yeaple's conclusions and demonstrate that host countries that have a better investment environment, larger markets and lower fixed entry costs, attract more foreign investors. Therefore, the host country's investment environment is very important in attracting foreign direct investment. Lansbury, Pain and Smidkova (1996) conducted an econometric analysis of the factors influencing the characteristics of FDI in the Czech Republic, Slovakia, Hungary and Poland for the period 1991 to 1993, finding as drivers human capital, technological facilities and economic infrastructure.

Carstensen and Toubal (2004) examined FDI for 8 countries in Central and Eastern Europe over the period 1993-1999 using dynamic panel analysis. They determined that a number of traditional factors, such as market size, the cost of trade, firm specific costs, provision of inputs, and also specific transition factors (such as the development of the private business, the method of privatization) and the risk associated to host country can influence the investment decision. Tintin (2013) investigates the determinants of FDI inflows for the six countries of Central and Eastern Europe over the period 1996-2009 by including traditional and institutional variables in a panel. The results certify the positive influence of GDP, openness of the economy, economic freedom, state fragility, political rights and civil liberties indices.

Analysis of empirical studies shows that the distribution of FDI between CEE countries is influenced, in addition to traditional factors (GDP per capita, labor costs factio level of taxation, etc.), by factors related to the institutional development, progress in terms of transition and risk factors. Political stability, democracy, legal system, bureaucracy, infrastructure, corruption and ethnic conflicts are factors meant to influence FDI.

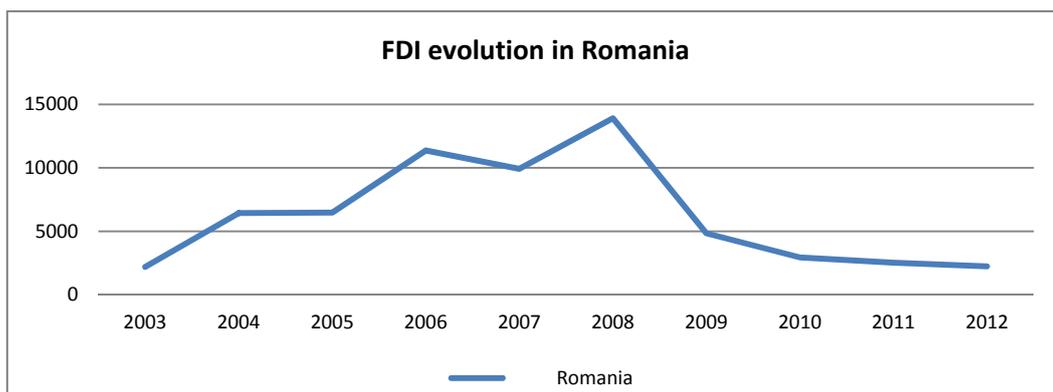
FDI in Romania

In the early 1990s, after the fall of the communist block, Romania was perceived by investors as a relatively risky economy. Alongside with the countries of Central and Eastern Europe, Romania was characterized by zero unemployment, zero foreign debt, private property almost absent and the lack of experience and specific conditions for international investment. Basically, the foreign investment arose from scratch.

To finance the debt and stimulate economic growth, Romania needed and still needs international investment to cover current account deficits (Roubini and Wachel, 1998). Romanian economy went progressively from lack of experience in investing to the creation of an efficient investment environment. In this paper we will refer to the period 2003-2012.

In this period, Romania gradually progressed in terms of FDI, with different rhythms and consistency that the Romanian economy has taken from socialism to a market economy and then, in the institutional context, to the European Union. Figure 1 shows that 2008 was a culmination point of FDI to Romania, and after this moment a decline followed, because of the global economic crisis. According to our calculations, in 2012 FDI were higher than in 2003 with only 2%, which shows that, from this point of view, Romania has returned in time. In 2008 compared to 2007 IDS raised 40.18%, as 2008 was the year following the accession to the European Union. But the joy of this increase did not last long and in 2009 compared to 2008, FDI decreased by 65.17%. Declines then continued every year, reaching 2.2 billion euro in 2012, which is a dramatic decrease from 2008, when situated at 13.9 billion euro.

Figure 1. *FDI evolution in Romania, 2003-2012, mil. euro*



Source: UNCTAD Statistic Database, 2013.

This decline is also reflected by the activity of foreign-owned firms, as shown in Table 1:

Table 1. *Number of companies with foreign capital and subscribed capital in 2003-2011*

	Number of companies	Subscribed capital (thousands of lei)	Subscribed capital (thousands of dollars)	Subscribed capital (thousands of euro)
2003	6.609	4441402,8	1.288.885,00	996235,1
2004	10.167	9.040.577,50	3032218,4	2.343.732,90
2005	11.719	7.173.157,10	3.149.681,60	2.434.525,40
2006	12.823	6.646.972,20	3.127.314,60	2417237
2007	15.720	7.737.574,20	3.314.201,60	2369392,2
2008	12.264	15034925,8	5.924.852,80	3.984.432,80
2009	6.801	15.303.310,60	4.817.293,20	3512610,5
2010	6.302	17.430.494,70	5.144.560,80	3.914.440,60
2011	6.377	10.190.486,10	4659785	3329432,4

Note: The first column shows the number of registrations in the mentioned period. Data on the share capital include capital subscriptions in the reference period, plus capital raises, minus capital of radiated companies from register of trade.

Source: Companies with foreign participation. Statistical summary of data from the Central Trade Register on July 31, 2012.

In 2009 compared to 2008, there was a decrease in the number of companies with 44.5%, a decrease of 18.69% of the issued capital in dollars, and a decline of 11.8% of the issued capital in euro. The difference of 7 percent between the issued capital in dollars versus euro comes from lower global confidence in the dollar. Year 2011 brought a slight increase of 1.1% in the number of companies, but not in the subscribed capital in international currencies.

This decline in FDI has stimulated policymakers to rethink economic and investment conditions in Romania so that the investment environment in Romania reforms have intensified with the onset of the economic crisis.

Studies in the World Bank Doing Business Report since 2008 to date show that there have been taken several measures to stimulate companies, such as reducing the tax burden, improving taxation, reducing the number of days to register a property by specific measures related to the Land Registry and Cadastre, investor protection, substantial changes to the law of insolvency, change in the regulations of building permits in order to reduce taxes and acceleration of the process, the introduction of electronic payment of taxes and eliminating minimum annual tax, reducing the time for obtaining an approval certificate from the tax administration agency, which facilitates starting a business, strengthening the legal framework for secured transactions. An important advantage held by Romania is facile access to credit. According to World Economic Forum, Romania is ranked 12th out of a total of 185 countries.

Besides these positive measures, during the mentioned period, less favorable measures for the investment environment were also taken, including: the introduction of a new tax in the amount of 0.05 % of the project, in 2010, which increased the cost of construction, or the requirement of the tax certificate for starting a business in 2012.

The studies show that Romania's weaknesses are infrastructure and institutions, low efficiency in the goods and labor market and low public confidence in the political environment. These weaknesses are discordant with a survey of Ernst & Young conducted on 812 investors which shows that the most important geographical factors that an investor takes into account are: transport infrastructure and logistics (63%), telecommunications infrastructure (62%), stability and transparency of the political, legal and regulatory environment (62%).

These measures and developments are reflected in Romania's positioning in the competitiveness index rankings, as follows in Table 2.

Table 2. *Global Competitiveness Index 2011-2014*

	2012-2013	2013-2014
Bulgaria	62	57
Czech Republic	39	46
Estonia	34	32
Hungary	60	63
Latvia	55	54
Lithuania	45	48
Poland	41	42
Romania	78	76
Slovakia	56	62
Slovenia	71	78

Source: World Competitiveness Report, 2011-2012, 2012-2013, 2013-2014.

It can be seen that, compared to the countries of Central and Eastern Europe, in terms of competitiveness, Romania has the second smallest index, and according to the global ranking, it ranks 76 out of 145 countries, with a 2 step position improvement compared to 2012. Estonia has the best performance, located at 32, and Slovenia has the worst performance.

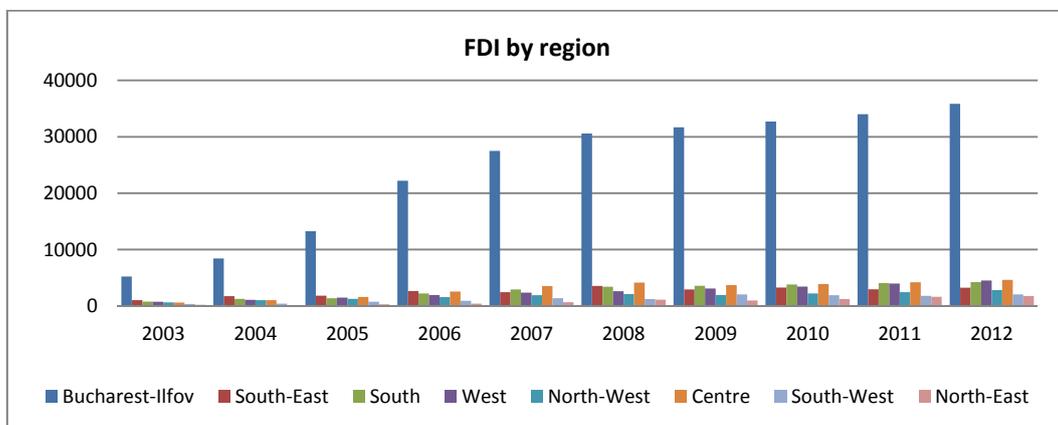
For 2012, the annual report on foreign direct investment made by the National Bank of Romania, show that the main countries that invested in Romania were the Netherlands (30.8%), France (16.0%), Italy (10.5%). For previous years, the first three places are also held by these three countries, but the difference is the change of position. The largest contribution to the rise in the rankings of our country had

Bucharest-Ilfov region recording the highest index of regional competitiveness between the 8 regions of Romania (Trașcă et al., 2013).

FDI by region

National investments are calculated by summing the data at regional level. Romania has 8 regions, namely: Bucharest-Ilfov, South-East, South, West, North-West, Central, South-West, North-East. Figure 2 illustrates the level of FDI in each region during the period 2003-2012:

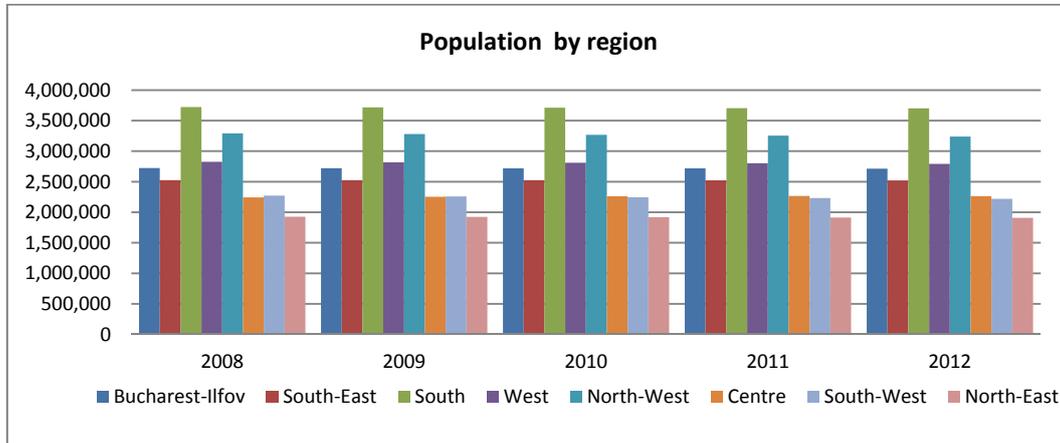
Figure 2. FDI by region, 2003-2012, mil.euro



Source: Authors’ calculations, data from NBR Annual Reports on FDI, 2003-2012.

There is a notable difference between foreign direct investments in Bucharest-Ilfov region and the other regions. While in 2003 this region took a share of 54.19% in the total foreign direct investment, in 2012 it reached a total weight of 60.64% in FDI. Bucuresti-Ilfov is the only region that has seen an increasing trend of foreign direct investment, in times of crisis. Shares of the other regions in total FDI are below 8%. Northeast region has the lowest share in total FDI, achieving a 2.9% share in total FDI for 2012 from 2.1% in 2003. Although it recorded the largest growth rate in 2012 compared to 2003, it maintains a low level of FDI. Southeast region holds the lowest growth rate of FDI. Its share in total FDI has decreased from 10.7% in 2003 to 5.5% in 2012.

Conventional sources of comparative advantages include, among others, market potential, factor prices and endowment of natural resources. One of the indicators showing market size is population. Figure 3 presents the evolution of the population on the 8 regions:

Figure 3. Population by region, 2008-2012, millions

Source: Authors' calculations, Eurostat data.

As can be seen, the region with the lowest level of FDI, namely Northeast, has the highest number of inhabitants, followed by the South region. The lowest level of the population is the West region, which does not show the highest level of FDI. București-Ilfov region has a small number of people compared to the other regions, even though it has a higher density. Therefore, we conclude that foreign direct investors in Romania are not in search for market, but in search for resources and efficiency.

We have conducted a regional econometric model for FDI. Laconic data has limited our selection at two variables that we have considered most relevant in determining market potential and factor productivity. As a source of the comparative potential advantage we introduced the average number of hours worked per week by region, which comes to capture the physical productivity at regional level. For example, Helpman, Melitz and Yeap (2004) concluded that productivity plays an important role in the investment decision of multinational firms, as only productive firms can earn enough profit to retrieve increased costs of FDI. A higher level of labor productivity leads to lower production costs and increased return on investment. An increase in the number of hours worked shows a decline in efficiency and therefore a decrease in FDI. Therefore, we expect a negative relationship between this indicator and FDI.

Another relevant indicator in determining FDI by region is given by GDP per capita, which reflects the income and wages in the region, providing information on the degree of development of the region. A high level of income shows a greater demand for goods and services, which attracts foreign investment in

search for markets. Since there is no data available for this indicator we chose to replace it with the household income. In most studies, the relationship between FDI and GDP (income) is a positive one, so that we also expect it to be positive.

Table 3. *Description of variables*

Variable	Definition	Relevance	Expected sign	Source
FDI	FDI stock in millions USD	Dependent		BNR
Income	Income per capita (euro)	Traditional	+	EUROSTAT
Number of worked hours	Average number of hours worked by week	Traditional	-	EUROSTAT

Source: Authors' calculations.

The data used in the model is annual data on FDI stocks for 2008-2012. The data summarizes a period of five years and this has led to the introduction in the model of a limited number of independent variables. The program we have used is Eviews 7. Regions analyzed are the Bucharest Ilfov, South-East, South, West, Northwest, Central, Southwest, Northeast. In order to maximize the number of observations we chose the use of panel data analysis.

The dependent variable is given by foreign direct investment stock, which we have obtained from the annual reports of the National Bank on FDI from 2008 to 2012. Specifically, we have associated the dependent variable and independent variables Average_Worked_Hours_per week and Income_per capita. The model is based on the following equation:

$$FDI_{it} = \beta + \alpha_{i,t} X_{i,t} + \delta_{i,t} + \gamma_{i,t} + \varepsilon_{i,t}$$

Where,

FDI is the dependent variable and it shows the stocks of foreign direct investment in region i at time t ;

β is the coefficient constant term;

$X_{i,t}$ is the vector of explanatory variables of the model;

$\alpha_{i,t}$ is the coefficient of explanatory variables;

$\varepsilon_{i,t}$ are error terms, the random variables;

$\delta_{i,t}$ and $\gamma_{i,t}$ are the values of cross-section or period specific effects (random or fixed);

i indicates the region;

t indicates the year.

We have first tested whether the model is valid using T-test and F-test. Another indicator showing whether the regression model is well specified is R^2 . It shows how much of the total variance of the dependent variable is due to the independent variables. Then, we resorted to testing over the chosen method: the method of fixed effects and random effects method. To achieve this we have used the

Hausman test, which shows whether the orthogonality assumption is violated in the first case, i.e. fixed effects. When using the fixed effects method, free term can vary between countries but does not vary over time, while the slope coefficients are assumed to be constant across countries. This method assumes that the free term is deterministic, that is correlated with covariates (regressors vector) and is based on internal estimation, i.e. each observation is inside the country "i", over the entire period. In contrast, random effects method assumes that the free term is stochastic (random), i.e. uncorrelated with the variables and included in the error term. In other words, random effects method is consistent only if the free term is independent or uncorrelated with the regressors or with the error term. This test compares the estimates for the fixed effects and random effects. For the fixed effects, Hausman test tests the null hypothesis H0: fixed effects method is consistent and efficient versus H1: random effects method would be inconsistent. The test result is a vector of size k that will be distributed chi-squared. If the test statistic is high, then the fixed effects method should be chosen, and if the test statistic is low, then the random effects method should be chosen.

Table 4. Results of the empiric study

Variables	Coefficient estimation
Income	0,34 (1,56*)
Number of worked hours	-114,6 (-1,95,27)
Constant	5052,39 (2,16**)
R ²	0,996
Adjusted R ²	0,995
Chi-squared	13,24 (0,0001)
F-statistic	867,29
Number of observations	40
Number of groups	8

Source: Authors' calculations.

Note: *p < 0.1, **p < 0.05, ***p < 0.001.

Results of the empirical model

The value of R² is 0,996 while adjusted R² equals 0,995, suggesting that the relevant information of the independent variables describing the dynamics of the dependent variable is strong, while the small difference between the two figures shows that the introduction of new variables to the model resulted in an increase of its relevance. Analyzing the results according to Hausman test, chi-squared value is high and p < 0.001, which means it is statistically significant and we reject the null hypothesis, namely there is not a significant difference between the estimated coefficients of the two models (one model is based on fixed effects method and the other is based on

random effects method). Therefore, we have fixed effects method for cross section level and random effects method for the period of time. This shows that the intercept may differ across regions, but does not vary over time, while the slope coefficients are assumed to be constant across regions. Such a model allows FDI to vary among regions, while FDI determinants should have similar effects on all regions analyzed. The model has the following form:

$$FDI = -114,6 * No_worked_hours + 0,34 * Income + 5052,39 + [CX=F, PER=R]$$

The number of worked hours has a significance level of 1 %, which indicates that the variable has a significant influence on dependent variable. The negative sign indicates that an increase of one unit of the working hours will cause a decrease in FDI by 114.6 units, when other variables remain constant. The results show that decreases in the number of working hours, which is proof of efficiency, cause higher levels of FDI.

According to the empirical analysis, income has an average degree of significance on the level of FDI (p-value < 10%). When it changes by one unit, the ISD change by 0.34 units in the same direction, as the sign "+" of the variable indicates a positive relationship between the two.

Therefore, investors in Romania tend to be oriented towards efficiency and resources. But one problem remains the negative issues related to improving the investment environment. Although progress has been made, some problems still remain.

Conclusions

One solution for generating FDI would be public-private partnership. Countries in Central and Eastern Europe increasingly resort to such partnerships. Examples come from Poland, where Motorway and Express Ways Development Program handles the construction of highways, Latvia, where there is a partnership for the international corridor for Baltic and ring road of the city Riga, Daugava River Crossing, or Bulgaria, where international airports Varna and Burgas have been rehabilitated through such partnerships. Steps in this direction exist. In Romania was established a department for coordinating public-private partnerships, namely the Department for Foreign Investment Projects and Infrastructure (<http://www.dpiis.ro/parteneriat-public-privat-27>).

In recent years, Romania has made some progress on the investment environment, therefore, compared to other countries, it has some advantages, such as openness to the European market (500 million consumers), promising growth rates compared to the European average, valuable human capital, highly skilled workforce at competitive prices (good knowledge of foreign languages, technology, IT,

engineering, etc.), similar legislation with the EU, active foreign trade. More and more investors are attracted to the renewable energy sector. Several privatizations are planned in the next period, encouraging investors around the world to look to Romania. This positive development can be stimulated by appropriate economic strategies and actions for the reduction of investment minuses.

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