Foreign Direct Investments Influence on Romanian Economy

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Abstract. Theoretical aspects on sustainability were developed especially after '80's, when debt rate as percent in GDP increases dramatically in developed countries. One question difficult to answer is that foreign direct investments (FDI) must be included in current account deficit sustainability level. FDI is more stable than financial flows due the fact that foreign investors have long term contracts. In transition countries, dynamics of fiscal processes affected consumption, internal and foreign investments and growth. In this context, we study the relationship between foreign direct investment and economic growth in transition countries, especially in Romania. To analyze the effects of FDI on Romanian growth we use a neoclassical model with Cobb-Douglas production functions, followed by a short term GDP evolution prognosis. Our basic results show that Romanian economic growth was positively influenced by fiscal policy, FDI and also by adhesion to EU.

Keywords: FDI, growth, unemployment, consumption, prognosis.

1. Introduction

Central and Eastern Europe countries are looking for FDI as a critical component to solving capital deficit problem. Consequently, economic research identifies two different types of analysis: studies focused on growth financing capacity and studies focused on global impact of FDI on growth. Various results argued that FDI is a direct result of growth but other studies shows that FDI generate economic growth. It is a reality that countries with extended rates of FDI/ GDP had greater growth rates. Also, resources efficient allocation increase economic growth.

One question difficult to answer is that foreign direct investments (FDI) must be included in current account deficit sustainability level. FDI is more stable than financial flows due the fact that foreign investors have long term contracts. FDI also increase exports and improves external balance. In transition countries, dynamics of fiscal processes affected consumption, internal and foreign investments and growth.

In this context, it is interesting to study the relationship between foreign direct investment and economic growth in transition countries, especially in Romania.

2. Literature

Generally, banks efficiency gains at microeconomic level depend on managerial efficiency and on scale efficiency. FDI can increase managerial costs or profit efficiency by transferring banking managing systems from outside to national representatives or by transferring new banking technologies and products. At macroeconomic level, efficiency gains results from risks diversification, reducing transaction costs, efficient allocation and utilizing of financial resources, all this increasing banking system welfare and stability. An efficient banging system exists with a low profit rate depending on interest, so it is possible to intensify investments and increase economic growth. Central and East Europeans financial markets indicates high levels of foreign proprieties (Domanski, 2005) that crucially influence FDI and domestic banking structure. But it is obvious that "foreign" does not reflect necessary a greater efficiency. Bonin (2004) argue that privatized banks by endorsement was less efficient that other banks privatized by another methods. Domestic

banks had competitive advantages due on local clients' previous contacts. From economies of scales foreign banks are not more efficient than domestic ones. That depends on modernizing expenses necessary to make viable purchased banks. Cost reduction will be effective only after a shortest or longest period.

Drakos (2003) shows that after Central and East European's institutional reforms start a competition between national and foreign banks. Generally, new investors represent new competitors, so banks acquisitions increase competition by new policies applied by new owners. In national banks can resists to foreign banks competition then domestic market efficiency will be improved (Claessens, 2001). A negative effect of this type of competition is an increased level of financial market concentration. Mamatzakis (2005) shows that an increased countries monopolistic financial market from Central and East European's (in 1998-2002 period) reduce efficiency growth. External shocks had also a negative effect on financial efficiency, especially due on restriction of foreign operations (contagious effect). Following Levine (1997) greater financial sector efficiency will reduce transactional costs. If it is possible to quickly obtain reduced cost capital then companies increase development and growth.

Using a VAR model, Misztal (2010) shows that foreign direct investments was one of the key factors which substantially influenced GDP growth in Romania during 2000-2009.

Using a production function approach employed with a panel data for 1992-2007 period, Verhorn and Vasarevici (2011) obtains that FDI and domestic investment are statistically significant determinants of economic growth; as well as prudent fiscal and monetary policy in Central and East European countries.

Any case, FDI can improve financial market efficiency. Entire financial environment must improve efficiency, so interest rates decrease and national and foreign investments increase.

There exists a paper Mencinger (2003) that shows a negative relationship between growth rate and FDI level for some Central and East Europeans countries. Even his result is incorrect, that shows it is possible to obtain for some periods a not increasing effect of FDI on growth for Central and East Europeans Countries.

3. The Model

We start with a standard neoclassical production function in perfect competition and constant return to scale:

$$Y = AK^{\alpha}H^{\beta}L^{1-\alpha-\beta} \tag{1}$$

where: Y is production level (GDP level), A is a total productivity index (or an index of global productivity), K represent physical capital, H is human capital and L is used labour force, α represent capital elasticity and β represent human capital elasticity. We can rewrite equation (1) by intermediary of labour productivity, $y = Y/L$, capital-labour ratio, $k = K/L$ and human capital-labour ratio, $h = H/L$:

$$y = Ak^{\alpha}h^{\beta} \tag{2}$$

Using a cross intertemporal section and first difference logarithmical equation we found equation (3) (i is country index and t is time index):

$$\Delta \ln(y_{it}) = \Delta \ln(A_{it}) + \alpha\Delta \ln(k_{it}) + \beta\Delta \ln(h_{it}) \tag{3}$$

But how is possible to include FDI in equation (3)? We have three theoretical points of view describing relationship between growth and FDI. First one include FDI in physical capital, K (positively or negatively, depending on flows direction). Second one includes FDI in human capital due on new knowledge added by foreign capital. Third one argues that global productivity, A, is positively influenced by FDI. We suppose FDI influences global productivity especially, because financial capital does not affect directly physical capital or human capital. We suppose to have an exogenous component, (γ_{A0}) and also a direct influence of FDI:

$$\Delta \ln(A_{it}) = \gamma_{A0} + \gamma_{A1}\Delta \ln(FSFDI_{it}) \tag{4a}$$

$$\Delta \ln(A_{it}) = \gamma_{A0}^{p} + \gamma_{A1}^{p}FSFDI_{it} \tag{4b}$$

Replacing (4a) and (4b) in (3) we obtain two equations than can be tested. Equation (5a) describes FDI's temporal efficiency growth and equation (5b) describes permanent efficiency influence of FDI.

$$\ln(y_{it}) = \gamma_{A0} + \gamma_{A1} \ln(FSFDI_{it}) + \alpha \ln(k_{it}) + \beta \ln(h_{it}) \tag{5a}$$

$$\ln(y_{it}) = \gamma_{A0}^{p} + \gamma_{A1}^{p} FSFDI_{it} + \alpha \ln(k_{it}) + \beta \Delta \ln(h_{it}) \tag{5b}$$

Other instrumental variables that can be used to analyze growth are public sector dimension, inflation rate or trade openness.

Public sector dimension will be estimated by government consumption ratio in GDP (GC). Following Barro and Sala-i–Martin (1995) government consumption are a good proxy to estimate political measures and also direct effects of unproductive public expenses. Other studies show that government consumption had a negative relationship with economic growth.

Other authors argue that transition economies are characterized by higher levels of inflation that negative influences growth, especially on restructuring debut. Higher inflation affects long term financial contracts so we obtain a negative relationship between inflation and growth. Khan and Senhadji (2000) and also Wachtel and Rousseau (2002) show that there exist a limit level of inflation that influence relationship growth-financing. As a consequence, empirical studies on finance-growth in transition economies include inflation and FDI flows as control variables (Mamatzakis, Cottarelli, 2005) (relationship (6a) and (6b) :

$$\ln(y_{it}) = \gamma_{A0} + \gamma_{A1} \ln(FSFDI_{it}) + \alpha \ln(k_{it}) + \beta \ln(h_{it}) + \phi_1 \ln(GC_{it}) + \phi_2 \pi_{it} \tag{6a}$$

$$\ln(y_{it}) = \gamma_{A0}^{p} + \gamma_{A1}^{p} FSFDI_{it} + \alpha \ln(k_{it}) + \beta \ln(h_{it}) + \phi_1 \ln(GC_{it}) + \phi_2 \pi_{it} \tag{6b}$$

These relationships represent our model's theoretical base. We expect γ, α, and β to be positive coefficients, ϕ_1 negative and ϕ_2 with ambiguous sign (due on fact that FDI's effects are lagged).

4. FDI in Romanian Economy

FDI's liberalization helps transnational expansion and increase industrial production in whole world. In this case FDI represents a market integration mechanism and also a link between national productive systems.

The statistical survey conducted by the National Bank of Romania and the National Institute of Statistics in 2010 shows an oscillatory evolution of FDI (see Figure 1).
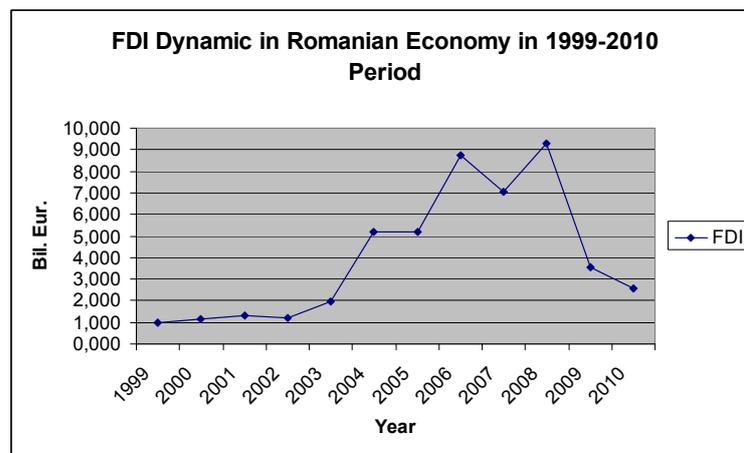

Figure 1.

After a very good period (2003-2008 years) when FDI level reach over 9 billions Euros, starting with crisis period the FDI level decrease dramatically, at 3.55 billons Euros in 2009 and 2.55 billions Euros in 2010. The FDI stock at end-2010 reached EUR 60.6 billions Euros, up 8.3 percent year on year.

Next we use the three models depicted in Section 3 in order to analyze FDI's influence on Romanian growth rate.

Data set covers the period 1990-2010 and the values are comparable, being expressed in 1990 prices. Physical capital (K) is represented by tangible fixed assets, human capital (H) is represented by Romanian population, labour force (L) is represented by average number of employees, FSFDI is foreign direct investments, GC is government consumption and Y is GDP level.

Estimating production function (Eq. 1) (using E-views program) we obtained:

$$Y = 32.02 \cdot K^{-9.199} \cdot H^{0.114} \cdot L^{1.111}$$

So, labour and human capital contribution to GDP dynamics are positives ones, but unexpected, capital contribution is negative. This result is based especially on reevaluation of physical capital in analyzed period. We can observe also the most important influence on GDP evolution is labor contribution, with 1.11 %.

Second estimated relationship is Eq. (5a) :

$$\ln(y_{it}) = 6.69 + 0.082 \cdot \ln(FSFDI_{it}) + 0.131 \cdot \ln(k_{it}) - 1.004 \cdot \ln(h_{it})$$

Analyzing results we can observe that FDI and labour endowment are positively correlated with GDP evolution, but human capital/labour ratio is negatively correlated with GDP evolution. This result depends especially on Romanian population reduction in analyzed period.

Third estimated relationship is Eq. (6a):

$$\ln(y_{it}) = 2.425 + 0.078 \cdot \ln(FSFDI_{it}) + 0.0477 \cdot \ln(k_{it}) + 0.2004 \ln(h_{it}) + 0.7168 \cdot \ln(GC_{it})$$

In this equation all factors are positively correlated with GDP evolution. Government consumption had a positive influence on GDP growth with 0.716 percent, the greater influence on all factors. Unexpected, for this model, FDI's influence on GDP is small, with only 0.078%.

All equations are significant and t-tests are relevant with a 95% probability.

Prognosis

Using previous equations we conduct a three-scenario prognosis to evaluate future GDP evolution. The three scenarios are an optimistic one, a pessimistic one and a medium evolution scenario, based on previous equations. Main hypothesis regarding our scenarios are described in Table 1.

Table 1. Variable values from prognosis horizon

Scenario	Variables (growth ratio)				
	Human Capital (H) %	Physical Capital (K) %	Labour (L) %	FDI %	Government consumption(GC) %
Optimistic	1	10	5	5	5
Medium	0	1	1	0	1
Pessimistic	- 2	-3	-2	-5	- 3

In pessimistic scenario we suppose that population follow trend line in last 20 years and decline by 2%, physical capital decline with 3%, labour decline with 2%, FDI decline with 5% and government consumption decline with 3% every year, due on crisis conditions. GDP evolutions for three analyzed models are depicted in Table 2.

We can observe that all three models offer practically same evolution of GDP.

Table 2. GDP dynamics in 2012-2015 periods (percent)

	Model 1 (4a)			Model 2 (5a)			Model 3 (6a)		
	OS	MS	PS	OS	MS	PS	OS	MS	PS
Period 2012-2015	2.68	0.98	-0.99	2.04	0.41	-0.8	4.65	0.96	-2.68

Legend: OS = Optimistic Scenario, MS = Medium Scenario, PS = Pessimistic Scenario

In optimistic scenarios we can observe GDP mean growth rates between 2.04 and 4.65%, in medium scenario we hade very disappointing under 1% growth rates and in pessimistic scenarios we obtain for each model negative growth rates, from -0.8% to -2.68%.

5. Conclusions

Foreign direct investments are a dynamic source of GDP growth in emerging countries and an important source of financial support. Host countries developed faster and better based on cash-flows and direct foreign investments, but also due on new technologies, restructuring national sectors and increased productivity and

efficiency. FDI can constitute at this moment a possible way to develop emerging countries and to reduce differences between developing countries and developed ones. Capital flows are influenced not only by country risk, but also from global and international factors. Actual financial international crisis have a negative influence on global economy. We expect to find a reduction of foreign direct investments in any country and any possible way to invest.

Our models suggest importance of labor, capital and FDI flows for Romanian economy. Our scenarios shows that it is possible, due on bad national and international conditions, to reduce GDP growth rate to a disappointing -2.68 % level. If political and economical decisions will be appropriate ones, then it will be possible to obtain for next 5 years a 4.65 % GDP rate increase.

6. Acknowledgements

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