Stimulating Economic Growth through Foreign Direct Investment

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ABSTRACT

The economic growth is a goal for all countries of the world, being also a condition of society's progress. Expressed by the growth rhythm of macroeconomic indicators, the economic growth and, especially, the economic development is a long term process which involves the quantitative and especially qualitative increasing of production factors, especially the human factor and the investments. The Foreign Direct Investment (FDI) are affecting the economic growth in many aspects. It was demonstrated over the years in countless studies that the Foreign Direct Investment are enhancing the growth and economic development of the countries where these are localized, contributing to productivity growth, the wages growth of workforce involved in the production process and its qualification, the volume of exports growth of host countries etc. It is well known also that the international investments have a major role in the transfer of technologies, encouraging research and innovation and generating economic progress. This paper proposes a theoretical growth model taking into account the FDI along with domestic capital. The proposed model analyses the relationship between amount of production, workforce, domestic capital and FDI, demonstrating that the use of national investments and workforce leads to much higher productions in the presence of FDI.

Keywords: Foreign Direct Investment, Economic Growth, Effects of FDI, Growth Model

INTRODUCTION

The achievement of high rates of economic growth represents one of the four main objectives of macroeconomic policy. The importance of economic growth lies in its contribution to the overall prosperity of the community. The economic growth is desirable because it enables the community to consume more goods and services and also ensures a larger quantity of goods and services (health, education etc.) thus leading to real improvement of living standards.

The investment flows obtained at the present time will have long term consequences on society, influencing in terms of qualitative and quantitative growth. Between Foreign Direct Investment (FDI) and economy of countries in which they are located it creates multiple links in that investment affects economic growth both in volume and its quality, aspect leading to increased economic efficiency of achieved investments.

Through the impact on economic growth, FDI affects a number of macroeconomic indicators among other variables, from the volume of exports and imports of host countries, to earnings, productivity, balance of payments, portfolio investment, domestic capital, technology transfers etc.

The Foreign Direct Investments affect the economic growth in many aspects, mainly positive, but there is the possibility, in lesser extent, of negative effects. The issue is extremely complex, being reported to the development level of the recipient country's economy, to its

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adopted policies where a very important role is held by the existing legislative framework in the field and, of course, the nature and characteristics of FDI flows.

The international investments may exert effects on the economy both directly, by increasing the level of the wages offered to employees, the level of qualification of the labour force and, most importantly, by increasing productivity due to the transfer of technology, know-how, knowledge management and marketing, and indirectly through effects on local firms.

Among the positive implications of the most important aspect we consider the transfer of technology and the expertise, inclusively through research and development departments. The multinational companies are promoters of technical progress. They bring it along in countries where are implanted modern technologies and production techniques, far more advanced than those existing in the host country, fact which offers them competitiveness and ability to maintain in the global competition given the amid higher competition international markets. Through the dynamic effects, this infusion of technology is gradually taken over by the local companies in order to maintain on the market.

A very important positive effect on growth is considered to be the influence of foreign investments on job creation in the country where there are implanted in all forms of location, particularly through Greenfield type investments and through maintenance of the existing ones, in case of mergers and acquisitions.

Equally, a particularly significant effect is represented by the positive impact of FDI on wages in the recipient country owing to the fact that the foreign companies offer higher wages to employees than the national companies, leading by default to the increase of consumption and therefore to the increase of the welfare level of the population. These two aspects create a direct link with the third pillar of sustainable development, namely with the social development, which involves lower unemployment, employment, poverty reduction, investment in education and health, social inclusion, cultural progress, etc..

A significant factor through which FDI contributes to economic growth is represented by the increase of skilled workforce. The multinational companies are closely concerned with their own personal qualifications, making regular training courses for them, both in the country where there are implant and in the home country. Over time the employees can orient towards local companies or can open their own businesses, thereby contributing to the dissemination of knowledge throughout the entire economy level.

LITERATURE REVIEW

The input of foreign investments in a country leads to a relationship of complementarity with the capital investments if the local market does not have sufficient financial resources to meet the needs of large-scale investment projects. Foreign investors are not constrained by underdeveloped of local capital markets, having access to external sources of capital. This aspect has also a positive effect on a different plan, namely, upon the balance of external payments by financing the current account deficit.

The presence of foreign investments in a market stimulates the local investment through multiple forms. The local companies are driven to invest in order to cope with the foreign competition; otherwise there is the risk to disappear from the market. Also between national and foreign companies there can be created a biunique relationship: either national companies become providers of inputs for the foreign companies, and thus creating an upstream relationship, with implications in increasing the demand for local companies and reducing the costs, either the foreign companies are tenderers of inputs for the local companies by technological support, in which case there is a downstream connection. This last point leads

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to chain positive effects of FDI by determining the increase of efficiency and competitiveness of local companies, which favours the local companies to move into international markets.

In the case of the relationship foreign investment - national investment, there has been found, however, in certain emerging countries a negative effect, meaning that the foreign companies have suppressed the majority of local companies following the fierce competition, causing their output from the market (Agosin and Mayer, 2000).

From the experience of countries that have over time attracted significant FDI flows it is found, for the most part, that these investments have generally positive effects on economic growth of these countries and it is the safest and most effective type of investment of all types of capital inflows, referring to portfolio investment and other financial flows, especially bank loans. Analyzing the influence and effects of capital inflows on domestic investment total, it was found that a $1 increase in total inputs, internal investments increased by approximately 50 cents. In particular, portfolio investment has no noticeable effect on inward investment; bank loans have a very low impact, while FDI produces an increase of 100% (Bosworth and Collins, 1999) of domestic capital. Moreover, FDI stimulates domestic investment, leading indirectly to beneficial effects on economic growth (De Soisa and Oneal, 1999; Bosworth and Collins, 1999).

Many studies over time particularly for developing countries showed that there is a direct relationship between FDI and gross domestic product (GDP) of FDI recipient countries in the sense that FDI contributes to GDP growth (Agosin and Mayer, 2000; Ram and Zhang, 2002; Alfaro et. alii., 2002; Campos and Kinoshita, 2002; Carcovic and Levine, 2005; Gheorghe and Muraru, 2010; Hudea Caraman, Stancu, 2012; Albu, 2013). Other research has shown that FDI has strong influence on the growth especially in high-income countries and insignificant one in those with low income (Blomstrom et. alii., 1994).

Research performed in time confirm that FDI contributes to export growth (Bouteiller and Fouquin, 2001; Mucchielli, 2002; Acaravci and Ozturk, 2012, Albu, 2013), influences labor market by increasing wages of staff in multinationals (Busman et. alii., 2002; Haddad and Harrison, 1993; Lipsey and Sjöholm, 2001; Feliciano and Lipsey, 1999; Oulton, 2001; Harrison, 1996; Griffith and Simpson, 2001; Ramstetter, 1999; Ngoc and Ramstetter, 2004), shows a higher labor productivity compared to national companies (Kathuria, 2000; Ramstetter, 1999; Chuang and Lin, 1999; Okamoto and Sjoholm, 1999; Howenstine and Zeile, 1994; Dunning, 1958; Dunning and Rowan, 1970; Girma et alii, 2001; Harris and Robinson, 2002), contributing in many cases to increased productivity of local firms and have a major influence on economic growth through the transfer of technology to countries in which they are located (Sjoholm, 1999, Almeida and Fernandes, 2006; Kumar and Pradhan, 2002; Javorcik and Spătăreanu, 2003; Damijan et alii, 2003; Keller, 2009).

THE MODEL PROPOSAL

The investment is a determinant factor of economic growth. The functions of Cobb-Douglas type consider the invested capital K and labour force L as the key factors of production growth Y. Considering the Cobb-Douglas type functions of:

$Y = h \cdot L^{\alpha} \cdot K^{1-\alpha}$, $\alpha \in [0,1]$, h = the coefficient of proportionality, $h > 0$. *(1)*

based on which there were developed the economic models of development that have proven to be viable during well-defined historical stages.

We propose below a generalization of the law *(1)* based on which we will discuss the possible effects of FDI and their role in economic growth and development.

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We propose a model where, in the absence of FDI *I,* the production is assumed to be known $P(K,L)$ where K represents – as usual – the domestic invested capital, and L, the utilized labour force. We propose as production function:

$$Y = \beta[P(K,L)]^{\alpha} I^{1-\alpha}, \alpha \in [0,1], \beta > 0 \ , \alpha \in [0,1], \beta > 0 . \quad (2)$$

We would call *1-α* the share of FDI in the production of goods. Indeed, if $1-\alpha = 0, \alpha = 1$, FDI do not appear at all, we obtain:

$$Y = \beta P(K,L) \quad (2^{I})$$

that is the production function of a system without FDI is the function that determines itself the domestic capital and labour force.

If *1-α=1*, *ISD* are used to full capacity *(α=0)*, hence:

$$Y = \beta I \quad (2^{II})$$

the production is proportional to FDI of value *I*. An interpretation of β appears out of here, as being the efficiency with which a monetary unit from FDI is valued in manufacturing.

We will consider these two situations as extreme cases which we will not include in general study therefore hereafter $\alpha \in (0,1)$.

We will analyse the dependence of Y on I following the classical method (studying the variation using derivatives):

$$\frac{\partial Y}{\partial I} = \beta(1-\alpha)[P(K,L)]^{\alpha} I^{-\alpha} \ (3)$$

$$\frac{\partial^2 Y}{\partial I^2} = \beta(1-\alpha)(-\alpha)[P(K,L)]^{\alpha} I^{-\alpha-1} . \quad (4)$$

It is immediately apparent that, under given conditions, $\frac{\partial Y}{\partial I} > 0$, namely Y is ascending in relation to *I*.

Also, $\frac{\partial^2 Y}{\partial I^2} < 0$, hence Y is concave as a function of *I* (Figure 1):

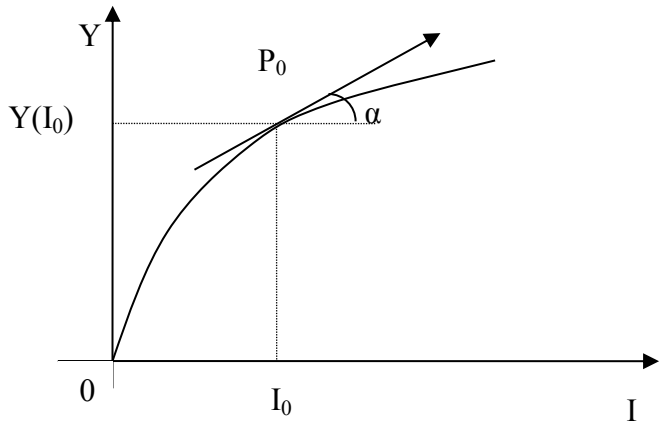

Figure 1. Production function *Y* curve

A higher FDI value therefore leads to a larger increase of production. In the $P_0(I_0, Y(I_0))$ point, the tangent to the graph has the slope:

$$m = tg\alpha = \frac{\partial Y}{\partial I}(I_0) = \beta(1-\alpha)[P(K,L)]^{\alpha} I_0^{-\alpha}. \quad (5)$$

From Figure 1 it is also noted that Y does not have extreme points at finite distance, so there are no peaks of production owed to FDI.

We may interpret the derivative from the point I_0 as the velocity (rate) of increase of Y due to FDI. It is obvious that this rate is of decreasing with I_0. This implies that for minor investments (I_0 minor), but also for minor productions ($Y(I_0)$ minor), the growth rate of production owed to FDI is significant. Within an economy with great production, ($Y(I_0)$ major), the FDI effect is less significant, but existent.

When $I_0 \to \infty$, we obtain:

$$m_{\infty} = \lim_{I_0 \to \infty} \beta(1-\alpha)\left[\frac{P(K,L)}{I_0}\right]^{\alpha} = 0. \quad (6)$$

Observation

The previous result is valid for $P(K,L)$ = independent of I_0. If we assume that $P(K,L) = \delta I_0$, δ = a constant, (therefore a relationship of $P(K,L)$ proportionality of Foreign Direct Investment(I_0)), then, it results:

$$m_{\infty} = \beta(1-\alpha)\delta^{\alpha}, \quad (7)$$

that is, the increase rate of Y as a function of I_0 is a positive constant.

Other properties of the proposed model are obtained from the curves of the constant production. We will take therefore in a orthonormal system OpI (p= $P(K,L)$ and I is the independent variables) the points place for which

$$[P(K,L)]^{\alpha} I^{1-\alpha} = k.$$

The curves of the constant production would take the form:

$$p^{\alpha} I^{1-\alpha} = k. \quad (7^I)$$

From here we obtain firstly:

$$I^{1-\alpha} = \frac{k}{p^{\alpha}}$$

$$I = \sqrt[1-\alpha]{\frac{k}{p^{\alpha}}} = \frac{\sqrt[1-\alpha]{k}}{\sqrt[1-\alpha]{p^{\alpha}}} = \frac{k_1}{p^{\frac{\alpha}{1-\alpha}}} = \frac{k_1}{p^m}$$

and secondly:

$$I = \frac{k_1}{p^m}, \quad m = \frac{\alpha}{1-\alpha} > 0. \quad (8)$$

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$I = \frac{k_1}{p^m}$ represents the link between the domestic production p and FDI *(I)* for which the total production is of $k = k_1^{1-\alpha}$.

The *(8)* equation is the curve equation of the constant production $k = k_1^{1-\alpha}$.

$I = k_1 \ p^{-m}$. *(8^I)*

By derivation we obtain:

$$\frac{\partial I}{\partial p} = -\frac{mk_1}{p^{m+1}} < 0, (\forall) p > 0, \quad (9)$$

$$\frac{\partial^2 I}{\partial p^2} = \frac{m(m+1)k_1}{p^{m+2}} > 0, (\forall) p > 0. \quad (10)$$

The *(9)* relation reveals that I is in decreasing as a function of p, and the *(10)* relation shows that the I graph is convex on the semi axis $(0, \infty)$ (Figure 2).

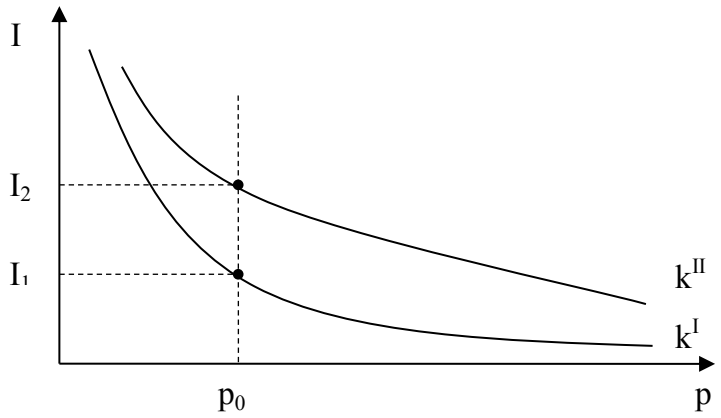

Figure 2. Investments curves

On the first curve the value of production is $k=k^I$. On the second curve the value of production is $k^{II}>k^I$. For the same value of p, $p = p_0$, there is obtained a larger production of k^{II} if the Foreign Direct Investment value I_2 is greater than I_1.

From here, it results that the same domestic capital K and the same labour force L result in a higher production when using FDI. In other words, FDI trigger training effects of the domestic capital by its potentiation.

CONCLUSIONS

The Foreign Direct Investment affect the economic growth in many aspects, especially positive, by increasing the productivity due to the technology transfer and know-how, by creating jobs in the country were they are implanted, thus increasing the level of wages offered to employees and increasing the qualification level of the labour force.

The most significant effect definitely consists in the technology transfer, expertise and modern production techniques, far more advanced than those in the country of origin, aspect which offers it the competitiveness and the ability to maintain in the global competition.

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Through the dynamic effects, this infusion of technology is gradually taken over by the local companies, allowing them to maintain on the market.

Between the foreign companies and the local companies there may be a biunique relationship: either national companies become providers of inputs for the foreign companies, and thus creating an upstream relationship, with implications in increasing the demand for local companies and reducing the costs, either the foreign companies are tenderers of inputs for the local companies by technological support, in which case there is a downstream connection. This aspect leads to a chain of positive effects of FDI by determining the increase of efficiency and competitiveness of local companies, which favours the local companies to access the international markets.

There is however, the possibility of some adverse effects created by international companies over the local companies, meaning that foreign companies have suppressed most of the local companies because of their financial power, a power which the local companies could not cope with, causing their output from the market.

The proposed model leads us to some concrete conclusions, namely:

- A greater value of FDI therefore leads to a greater increase of production;
- For minor investments (I_0 minor), and also for minor productions ($Y(I_0)$ minor), the growth rate of production owed to FDI is significant. Within an economy with great production, ($Y(I_0)$ major), the FDI effect is less significant, but existent;
- The proposed model indicates that the Foreign Direct Investment act as a domestic capital injection in a production function, the volume of the utilised FDI being crucial for the production increase;
- The same domestic capital K and the same labour force L result in a higher production when using FDI. In other words, FDI trigger training effects of the domestic capital by its potentiation;
- The effect of FDI is continuous, meaning that there are no production peaks in the FDI increase followed by decreases. This fact encourages the FDI growth without fear of negative side effects.

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