

SOME DETERMINANTS OF ECONOMIC GROWTH IN ROMANIA: FOREIGN TRADE AND FOREIGN DIRECT INVESTMENTS

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Abstract: This paper presents some theoretical arguments for which trade and foreign direct investments can be considered among the main determinants of economic growth. Through foreign direct investments positive externalities inside the economy has to enhance the economic growth. The liberalization agreements of foreign trade with European Union stimulated exports and more intensively, imports of Romania with this group at which she belongs now. Whether or not the foreign trade and the foreign inflows contribute to the economic growth of the country remains an open question. We try by this paper to focus on these issues.

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1. Introduction

After the communism, in Romania followed a period of transition and there has been a general positive view that the liberalization of trade and of foreign inflows can generate positive externalities inside the economy. It is important that this question should be addressed and solved as the answer can represent a good reference for the policy makers.

In this paper we are interested to understand the theoretical arguments that exist about this relationship. In M. Pop Silaghi [2006] we were interested to see if trade can be considered a main determinant of economic growth from a causal point of view. Our results were not the most optimistic ones but they encouraged to further assess these issues and to try to extend the model.

There are many studies that use regressions to explain the relationship. Even if regressions are considered spurious and can lead to positive associations thus causality would be preferred, for Romania little work has been done with both FDI and foreign trade in an integrated framework.

Our paper is part of the literature that seeks to establish the determinants of economic growth. We will proceed as follows: in section 2, we will present some theoretical and empirical arguments regarding the relation between FDI- economic growth, respectively foreign trade-economic growth, in section 3 we will present some aspects of Romanian economy, section four we will run multiple regressions (with FDI, trade and growth) using yearly data and section 5 concludes.

2. Literature review

The international exchanges bring gains of welfare and efficiency of which benefit all the countries, no matter what their initial situations, their level of development, their technological level or their natural resources endowment are. These gains are different with respect to their belonging and the specialization is being underlined by the classical theories of Adam Smith and David Ricardo or by the advantages of the large markets, implied by the new trade theories (see [Krugman & Helpman, 1988]). In sustaining this positive view, the empirical studies have a major importance.

A high number of empirical studies were oriented upon the relationship between exports and economic growth identified in many cases with the increase of output or the increase of GDP ([Michaely, 1977]; [Tyler, 1981]; [Feder, 1983]; [Kavoussi, 1984]; [Balassa, 1985]). Most of the studies were based on simple

regressions between exports and growth and the results were in all cases the finding of a correlation. In the less developed countries, there was found a weak correlation and the problem which had been raised was to determine the minimum level of the economic development that has to be attained by a country in order to benefit as a result of the economic growth (see [Michaely, 1977]; [Tyler, 1981]). For example, [Tyler, 1981] worked over a sample of 55 developing countries and confirmed the positive relation between the expansion of the exports and the increase of production. But, during his analysis, he renounced to some countries from the sample due to the fact that he observed that it was necessary a minimum level of development for countries to benefit of the exports' expansion, mainly of the manufactured exports. The author used a Cobb-Douglas production function, incorporating three production factors as: capital, labor and exports. In the conditions of an increased specialization, due to the comparative advantage law, the countries can use the abundant labor resources and the productive capacity, and the exports can also increase more rapid than in other situation, as Tyler [1981] states. The dimension of time was used in his study, all the variables being expressed in function of time. The author replaced in the initial function the total exports with the manufactured exports, and the impact on growth was also positive. More than that, under the assumption of neutral Hicks progress, it was observed that the manufactured exports were accompanied by a higher level of technological progress.

The studies based on the relation between imports and GDP, even they were weaker in what concerns the statistical methodology, had also an important role in the strengthening of the global relation between trade and growth. As examples, we mention the study of Dominiguez [1970] which showed that if the countries are oriented upon the import policies, the import extent is determined by two important factors: their degree of production diversification and the way of allocating resources in these countries. The evolution towards a high productive allocation – associated with the high level of the incomes can influence imports in two different ways. Firstly, in an indirect manner, high levels of the income determine a more diversified demand and secondly, in a direct way, the level of imports can be explained by the need of completion the lack ness. This last effect is explained by the fact that the needs for primary goods are increased and they won't be fulfilled through the internal disposable resources so it will result a high demand for the finite and intermediate goods, obtained in insufficient quantities. Grossman & Helpman [1991] demonstrated the important role of the imports of goods or of foreign equipments in the process of economic growth of a country. The role of these imports is to introduce foreign equipments which do incorporate foreign technology in the internal manufactured production of the country, in order to create a more efficient national production system. As a consequence, they will encourage the increase of the productive capacity, the increase of the global productivity of the factors in the final production and the development of the technological capacity of the importing country, through the international diffusion of the knowledge. Other studies that were oriented upon the import-growth relation were those of Perreira [1996] and Larre & Torres [1991] which also reached to favorable results of the impact of technology imports over the process of economic growth.

Fogel [2006] proves the way in which can attain the desired objective of quadrupled rate of GDP till the year 2020. The author is interested to observe the interaction between economic growth and its main determinants in China. The richness of China's objective in growth' trajectory is facilitated, in the author's opinion, by the improvement of the quality level, education, political stability, institutions' quality. Constantini and Monini [2006] analyze the causal relation between human capital, natural resources and economic growth. The sample they worked upon was composed of developing countries as well newly industrialized countries. The first conclusion that they reached after a rigorous econometric testing was that for attaining a sustainable level of capital accumulation is a difficult task inside the first stage of economic development. The second conclusion was that the human capital accumulation represents a valid means of maintaining an equilibrated growth rate of consumption on long term. The positive role of the life's quality correlated with the education level represent key elements in assuring a sustainable economic growth. The third conclusion was that a high technological level will transform the natural resource intensive economies in technology intensive economies and this thing will be correlated with a reduction of the process of degradation of natural resources and it will reinforce the virtuous circle of the economic growth and human development. Jones and Schneider [2006] realizes an interesting approach of the process of economic growth by the interaction with the human capital doing a survey in the psychological literature of the intelligence tests. The authors reached the conclusion that a proper measure of the human capital is revealed by the IQ tests. Using new national data basis, the authors show that in the regressions of the economic growth, which include robust control variables, the IQ coefficient is significant. in 99.8% of

those 1330 regressions, passing easily the Bayesian tests of robustness. A one-percentage growth of the medium national IQ is associated with a growth of 0.11% of the GDP.

Using panel data for 14 transition countries, Funke and Ruhwedel [2005] are interested of the link between production variety and economic growth. The empirical calculus is based of HS 5 digit classification data posed at disposal by OECD. The study results show the fact that in the open economies; the economic growth attains higher levels than the closed economies. Walde [2005] starts from the current explanations given to the situation in which a country passes through periods of boom or recession as those based on the predictability of the research- development investments circles. Because this thing is empirically controversial, the author starts from a model of the endogenous growth cycles as the stochastic Poisson model in which there are analytical studied the determinants of the cyclical behavior of research-development investments. The providing of an explicit expression regarding the expected value of a cycle shows that the most frequent fluctuations can be explained in a proper manner by this model. Also, it is proved the way in which the reduced technological improvements can determine intense fluctuations.

Concerning FDI, it seems to be generally accepted that the main channels through which they can contribute to economic growth are: technological transfer, capital accumulation, access to international markets, managerial and marketing practices and job creation (Lall [2000], Te Velde [2001], Borensztein [1998]). Another consensus is that FDI and growth are positively correlated under the conditions of existence of a minimum level of human capital, technology and infrastructure in the host country. This is what Blomstrom and Kokko [2003] define as the “threshold level of development”. According to Serbu [2007], FDI are given an enhancing role for growth by the characteristics of the country. Athukorala and Chaud [2000], and also Balasubramayaur et al. [1996] sustain that countries which promote open trade policies benefit significantly from the growth enhancing effect of exports- oriented FDI. Continuing this idea, Blomstrom [1994] identifies as a necessary condition for positive correlation a sufficient level of per capita income. Borensztein [1998] underlines the importance of human capital in attracting FDI inflows and therefore technological transfer, but also FDI’s crowding-in effect on domestic investment, private or public, advancing in an indirect way the overall economic growth. Another condition taken into consideration is the technological gap between foreign and local enterprises; a smaller gap should determine a greater spillover effect [Borensztein, De Gregorio, Lee, 1998]. Rajan [2005], more interested in policies, argues that local policies, instead of offering financial or fiscal incentives for FDI, should concentrate on improving the country’s absorption capacity, meaning better infrastructure, qualified labor force, technology and local management.

Many studies concerning FDI and growth have shown a positive association between FDI and GDP, but the direction of the causality is not very clear. Is FDI encouraging economic growth or is the high rate of growth that attracts FDI, in search of high profits and new markets? On one hand, Carkovic and Levine [2002] argue that, once the country specifics and endogenous FDI inflows accepted, FDI has not a robust influence on long-run growth. On the other hand, Hansen and Rand [2006], using a sample of 31 transition countries, find that FDI causes significantly the growth of the GDP, also in the long run, and more important, the long-run impact is independent of the level of development.

3. Some aspects of Romanian economy

The economic openness from the first years of transition found the Romanian economy unprepared from structural and competitive point of view. The economy has to put many efforts to adapt, in both the internal market and external market. The increase of demand determined a boom of imports for consumption and determined a high level of inflation. To increase competitiveness, it was a vital need for investments in new technologies, research-development and an increase in labor productivity

The Agreements of liberalizations signed by Romania with EU contributed significantly to this fact. We computed the degree of openness and its composition in [Pop Silaghi, 2006] and we found out that it had been based more on imports than on exports in every year considered for the analysis. The openness was mostly due to the trade with the European Union. The comparative advantage indicator showed that Romania holds comparative advantage in sectors in which the inward processing system is high as textiles, furniture, so where labour costs are low. On long term we showed that these cannot be comparative advantage sectors as there always can be competitors and more, as member of European Union there will be in time a convergence in terms of wages.

It is very important to study the impact on economic growth of trade and more, to link it with the effect of FDI. Even in a regression country framework, there will be a step forward to analyze this relationship.

Like most countries in the region, Romania has followed approximately the same path in transition, until a certain point. In the beginning of the nineties, production has dropped in all former communist economies, with positive economic growth rates since 1997. Romanian policies implemented at the beginning of the transition to regain economic growth have failed, mainly because they encouraged consumption instead of investment. Therefore, using FDI as a solution to current account deficit had highly diminished its role upon economic growth. During 1990-1995, there has been an increase of FDI inflows towards commerce and services, small size enterprises, in the context of fiscal incentives and low labour costs. After 1995, FDI increased in production sectors, having an obvious superior impact than those in services. In recent years, Romania has become attractive to investors due to the increase of demand in retail, financial services and real-estate, it has reached a certain level of market stability and a significant reduction of country risk. Low costs, especially in labour, continue to be a strong incentive, but investors start to concentrate on value-added products. Low labour cost is expected to lose importance as an attraction factor, as Romania is expected to have a 12 % annual growth in labour costs. Compared with her neighbors and based on her economic potential, Romania has certainly attracted insufficient FDI.

4. Data and methodology

We will use data for Romania during 1991: 2006, annual data, FMI databasis, Directions of Trade Statistics and Balance of Payment Statistics. All data are expressed in US dollars.

We will consider the following regressions:

$$\log GDP = a \log FDI + \varepsilon_1$$

$$\log GDP = b_1 \log X + b_2 \log M + \varepsilon_2$$

$$\log GDP = b_3 \log FDI + b_4 \log X + b_5 \log M + \varepsilon_3$$

Performing a descriptive statistics analysis, we observe that until 1997-1998, an interdependence relation can be detected between FDI and growth, but the trend changes around 1998, when FDI seems to become not only with neutral effect, but with a negative sign. The correlation seems to reappear after 2001. We performed the 3 regressions using OLS. The first one tries to capture the effect of FDI on GDP, isolated from other factors. The second one implies trade, and the third one combines the effects of FDI, exports and imports together. We expect to have a significant positive sign for FDI, as well as for exports. Results are presented in Table 1.

Table 1. Interrelationship between GDP, FDI and Trade: Econometric results

Independent variable	OLS Estimates		
	Dependent variable GDP		
	1	2	3
Intercept	$\varepsilon_1 = 24.10584$ (0.0000)	$\varepsilon_2 = 20.81977$ (0.0000)	$\varepsilon_3 = 17.62928$ (0.0000)
FDI	$a = 0.039741$ (0.0035)	-	$b_3 = 0.048884$ (0.0003)
Exports	-	$b_1 = 0.205399$ (0.3563)	$b_4 = 0.145719$ (0.3326)
Imports	-	$b_2 = 0.356891$ (0.1014)	$b_5 = 0.163286$ (0.2167)
R ²	0.47	0.85	0.95

*** Note: In brackets we have the *p-values* associated with the coefficients.

Looking at the first equation, we find a positive coefficient, which is statistically significant. Our finding is consistent with our expectations, an increase in FDI stock will increase the GDP. The Durbin Watson statistics indicates a positive first order serial correlation in the residuals. In the presence of serial correlation, the OLS estimators remain linear and unbiased, but they are no longer efficient and standard errors are likely to be underestimated. A possible cause of serial correlation is omitted variables, the missing independent variables being contained by the disturbance term. We tried to improve the results by including trade in equation 3. The White test shows no important signs of heteroscedasticity.

The second equation estimates the relationship between trade and growth. We found no problems of serial correlation or heteroscedasticity, but we are surprised by the negative sign of exports, even though it is not statistically significant. In other words, higher the exports, lower the GDP. This can mean that there is not an evidence in Romania of the minimum of development on which the literature on cross country regression is focused. The fact that Romanian exports are more concentrated on inward processing system is a possible explanation also of the negative correlation. The problem that appears is to determine the minimum level of economic development that Romania has to attain to benefit of a positive effect of the exports expansion on the economic growth. It may be the case of the first years of transition that were the most difficult period. Perhaps at a delimitation of periods using more performing techniques of eliminating shocks would have led us to more optimistic results.

An interesting aspect is the positive coefficient found for imports although not significant. Grossman and Helpman [1991] proved the important role that imports of goods or foreign equipments have in the process of economic growth. The objective of these imports is to introduce in the manufactured production foreign equipments more productive which incorporate foreign technology. This will induce a system of the national production more efficient, the increase of the production capacity and the development of the technological capacity of the importing country, by the diffusion of knowledge. For Romania, thus, it is a step towards this theoretical direction although the imports so far are more oriented on consumption rather than on investments.

The third regression brings together FDI, trade and GDP. The R^2 is 0,95, suggesting a good explanation of the model, compared to the R^2 of the first 2 individual equations. Exports have a positive coefficient, as we would expect, as well as imports, even though their coefficients are not significant. The errors are homoscedastic and considering a 95% confidence level, the Breusch Godfrey test shows no serial correlation in the residuals.

The surprise comes from FDI, who enter the regression with a negative sign, highly significant. This comes in contradiction with our hypothesis that FDI induces growth. We found several possible explanations. A first explanation, of statistical reason, is that other explanatory variables have been left aside, and in the reason of sensitive transition data, it could have had a certain influence on the results. Secondly, the regression is not independent of correlation between the factors, especially FDI-led exports. We take into consideration, for a future study, to take as independent variable the ratio FDI/ GCF gross capital formation, since the main channel of generating growth seems to be capital transfer. According to the economic theory, investments capable of generating growth are investments arrived at a certain maturity level. Hence, Romania had a certain delay in attracting FDI, therefore the maturity level required has not yet been fulfilled. Another reason for these results that fact that we consider FDI as a compact variable, and in reality the impact of FDI should be detailed on the different types of FDI and different value-added sectors of the economy. As suggested in Serbu [2007] and other studies on transition countries, "greenfield" FDI should exceed acquisitions related to privatization process, in order to improve economic performance.

5. Conclusion

In this paper we did a country regression analysis, using Romanian data on exports, imports, FDI and economic growth. We tested three simple equations in order to have a clue of potential relationships inside Romanian economy between these variables. The impact of FDI on growth is significant only when it is studied separately. The inclusion of exports and imports in the model change the results, FDI have negative coefficient and exports and imports has positive signs but no significance is found. This demonstrates that the omission of other determinants of economic growth affects the impact of FDI on GDP. FDI by themselves induce a false effect of growth. The third equation reveals the fact that Romanian level of

development is not sufficient to enhance a positive effect of the FDI, exports and imports on the economic growth of the country. The disadvantage of the statistical regressions is that they do not incorporate the time dimension in the analysis. The regressions do not take into account the order in which the incorporated data in the regressions are generated by the studied phenomenon. We consider at this stage our work as an exercise to test relationships without employing time series econometric tools. Although positive associations can be causes of spurious regressions, they can offer minimal clues about the nature of the relationships from a static point of view. It will follow the tests of causality by which we will try to determine from a dynamic point of view the nature of the relationships inside Romanian economy.

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