Determinants of Inward Foreign Direct Investment in Greece

Pantelis Pantelidis and Effrosyni Paneta

***Abstract*—Foreign Direct Investment (FDI) plays a key role in the era of globalization, as it contributes significantly to the strengthening of national economies in many countries. FDI supports and enhances a country's economy, it improves infrastructure, contributes to the development of new techniques and skills and leads to an increase in the financial resources of the country. Therefore, FDI benefits a country's economy in many ways. Thus more and more incentives are provided by various states to maintain and reinforce such investment in their territory.**

The aim of this paper is to identify and examine the factors affecting the flow of inward FDI in Greece. Using econometric techniques, we examine the factors that affect FDI flows into Greece for the period 1982-2013. From the results of the study, it seems that inward FDI is positively affected by Gross National Income, Exchange Rate and Openness of the Economy and is negatively related to Unit Labour Costs, Corporate Tax Rate and the Greek membership in the European Monetary Union. Therefore, in order to strengthen the attraction of FDI flows in Greece, there should be an appropriate institutional framework with a view to reduce taxes on corporate profits and make a strategic planning, which will aim to the further economic openness of the country and foster economic growth.

***Index Terms*—Foreign direct investment, Greece, international business.**

I. Introduction

The internationalization of economic relations and the globalization of markets, which characterize the modern economy, is a phenomenon that has existed for centuries. The extraversion that occurred since 1870 was the beginning of the development of a globalized economy, thus increasing mobility of capital and the growth of trade [1]. Globalization according to [2] includes a process of development of national industries internationally. International trade and Foreign Direct Investment (FDI) affect the growth of an economy, as they can finance sectors where domestic funds are insufficient to do so. FDI is defined as the creation of subsidiaries abroad, from parent companies that partially or wholly own these subsidiaries with the aim to operate them abroad [3].

First of all it is important to mention that FDI helps in various ways the host country. Through these investments the host country obtains the ownership advantages the multinational companies have, such as new technology, innovation and the experience [4]. Furthermore, inward FDI is very useful especially during an economic crisis in a country, as during these downturns, unemployment is rising and there is a lack of liquidity. Therefore, when FDI enters a country, provides funding in several of the affected economic sectors and there is the possibility of using existing infrastructures, whereas improves the technological level and new jobs are created. This fact increases comparative advantages and enhanced entrepreneurship, as there are opportunities for the host country to create new dynamic economic sectors.

Additionally, when FDI competition is enhanced, as products with high quality are created, which are sold at lower prices to the consumer, a high percentage of human resources is used and new economic sectors are developed, which the host country cannot produce them otherwise, thereby changing the structure of production of the economy [5].

On the other hand, multinational companies which invest their capital abroad would have an extra benefit investing in various countries, as they have diversify their holdings. In this way, they reduce the overall risk of their portfolio [6].

The origin of FDI in Greece is traced from 1953 according to [7]. However, throughout the 1950s, foreign direct investment was limited. At that time boosting domestic production prevailed. Thus, Greece only accepted foreign direct investment which supported domestic production and substituted imports. Furthermore, most investments were made by USA companies and were mainly horizontal. Also, most of FDI flows were directed towards the manufacturing sectors, such as transportation, basic metals, chemicals, oil and plastics and tires, whereas a significant portion of these investments flowed to industries such as tobacco, textile and paper [8].

During the 1980-1988 inward FDI was directed mainly to the manufacturing sector, whereas since 1988, FDI appears to be available equally in both the secondary and services sector. The attractiveness of Greece as a country to draw foreign investment appears declined compared to other EU countries. It seems that the benefits of regional economic integration that began at that time were not taken into advantage by Greece in order to raise its location advantages position [9].

After 1990 another issue that arises with respect to FDI in Greece is the difference in source of capital invested. Specifically, it is observed that the invested capital from USA, appear to be limited in contrast with direct investments from European Union. Since 2000, European Union is providing the bulk of FDI in our country. Therefore, throughout 2003-2013 Germany and France are among the first countries

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that supply Greece with direct investment, followed by Cyprus and United Kingdom. Still, there are positive prospects for the future of inward FDI from Russia, Eastern Europe, Middle East, Arab countries and Asia - especially China - from which there seems to be particular interest in areas such as energy, telecommunications, tourism and transportation

In the last decade the economic situation in Greece deteriorates. Greece's reduced development, soaring debt and huge deficits discourage foreign investors, whereas domestic market seems unable to confront this economic situation. This fact will continue to deteriorate in the absence of development of the country. The improvement of macroeconomic parameters of the country, however, can occur by enhancing the international competitiveness of the country and also with new private investments initiatives which will attract the necessary funds to upgrade the economy.

Public investment given the situation is not particularly high and even the private sector is unable to allocate the necessary funds for the accomplishment of new investments. However, attracting private foreign investment by Greece could be the only and perfect solution if the State enhances and strengthens initiatives and relations with foreign companies.

Recently, inward FDI in Greece shows volatility as large capital inflows came to Greece in 2006 and 2008, which reduced in 2010, due to the economic crisis. However, from 2010 incoming invested capital shows increasing trend. Most FDI still goes to the services sector, followed by a considerably smaller proportion of the secondary sector. Therefore, there is an increase in investment in services, owning to the improvement of the financial system, telecommunication development and strengthening of trade. Additionally, the manufacturing sector is quite significant and it seems that attracts large sums of FDI in Greece, especially in the sector of chemicals, possibly due to the rapid growth of pharmaceutical industry in the country.

The aim of this paper is to examine the factors influencing the decision of companies to invest in Greece. Furthermore, these factors will be analyzed using econometric techniques, in order to arrive at conclusions on their contribution to further development of inward foreign direct investment in Greece.

There is enormous research which studies the factors which contribute to attracting FDI in the host country. The investment climate is the major factor examined by companies, which want to invest in a foreign country. As investment climate is considered the economic policy, institutions and regulatory environment in a foreign country [10]. Generally, the FDI determinants can be divided into microeconomic and macroeconomic factors.

Microeconomic factors include property rights, products or services differentiation, technological advantages and economies of scales [9], [11]. Conversely, macroeconomic dimension influences FDI, which is examined in the present study, refers mainly to market size, interest rates, openness, exchange rate, interest rate, tax rates, technology and infrastructure of the host country [12], [13].

According to [14], investors who want to offer their funds in a foreign country prioritize the factors to attract FDI as follows. First of all interest they examine the availability and quality of infrastructure of a country, second the availability and educational level of the workforce and later other factors such as the cost of capital and labour cost, and fiscal and financial incentives.

Reference [15] argues that foreign direct investments are attracted mainly by countries seeking more liberal policies. These policies promote the integration of a company in the world market, intra-industry trade is developed more easily and companies operating in these countries may take advantage of local resources and create an upgraded product, which will be able to export.

In recent years, emphasis was given to institutional factors from investors who wish to do foreign direct investments, such as reduction of corruption, proper administration of justice, reduction of bureaucracy. FDI will enter in a country with an environment properly configured and friendly towards investment, with several tax incentives, exemptions and reduced uncertainty and political risk [16], [17].

II. Data and Methodology

To investigate the factors affecting inward FDI in Greece, annual time series data are used, which were collected for the years 1982 to 2013. Therefore, based on the economic literature the variables that are examined are the following:

1) Dependent Variable
2) Inward *Foreign Direct Investment (FDI)* in Greece. Annual FDI flows were taken from UNCTAD.
3) Independent *Variable*
4) Market *size in the economy of the host country* is expected to have a positive correlation with inward FDI, since increased economic growth of a country, creates more opportunities to exploit the economies of scale [18]-[23]. To determine the growth of the economy of Greece, used the Gross National Income (GNI, US $, constant prices, millions) from the OECD.
5) *The* exchange *rate* affects incoming foreign direct investment [22]. A depreciation of the domestic currency tends to increase foreign capital entering the host country. Generally, it cannot be predicted whether there will be positive or negative correlation of exchange rate with the inward FDI. In order to show this relationship in the case of Greece, it is estimated the drachma exchange rate against the dollar until 2002 and after this period the exchange rate of the euro against the dollar [24]. Data on the exchange rate are taken from Eurostat.
6) Labour *cost* is one of the most significant factors contributing enough to the total cost of production and to the productivity of businesses. Low labour cost can contribute positively in attracting foreign direct investment [13], [25]-[27]. As an index of labour costs, the Unit Labour Cost defined by OECD is used.
7) Infrastructure of the country is a prerequisite for attracting foreign direct investment. Ports, roads, railways, telecommunications and buildings are

defined as infrastructure. A low-quality infrastructure system can reduce the flow of foreign direct investment in a country [21], [28]. To investigate whether infrastructure affects FDI or not, the index telephone lines per 100 inhabitants is used and is taken from the World Bank.

8) *Technological skills* available in a country, is another variable influencing the intention of multinational corporations to find the appropriate location. Reference [15] show that there is a positive correlation between patent applications and inward foreign direct investment. Therefore if the country which receives FDI has the ability to transfer, adapt and create technological resources, becomes more attractive to multinational companies. These companies would prefer to transfer their funds there, in order to gain these technological advantages. Technological skills are in our analysis approximated by the number of patent applications, drawn from the OECD.
9) *Interest rates* that concern the domestic economy of the host country related to monetary and exchange rate policy pursued by the government, affect inward foreign direct investment. Low interest rates lead to investments financed by local sources of capital and high rates of interest lead to investments covered from foreign markets [29]. To measure the interest rate as an indicator identifying FDI, the difference in nominal lending rate in Greece than the nominal interest rate in Germany, are used once again drawn from the OECD database.
10) *The openness of the economy* indicates whether there is a liberal attitude of the country towards international trade and was therefore considered as a significant factor, which affects foreign direct investments [19]. This factor includes adding imports and exports of goods and services as a percentage of Gross Domestic Product, which was drawn from the World Bank and in accordance with [21], [27] seems to positively affect FDI.
11) *The tax rate on corporate profits*, which was also drawn from the OECD, has a direct impact on the returns made by the company that makes an investment in the host country. So, according to [27], [30], there are countries where the tax rate does affect the decision of investors to FDI and others in which the tax rates are not affecting FDI at all. All of the above studies agree that the smaller the tax coefficient is, the more FDI entering a country.
12) *The participation of Greece in the Eurozone (EMU)* is a factor to be considered in this study, as it affects FDI [31]. By adopting the euro and after Greece' participation in the Eurozone, it is expected to have a greater cross-border economic penetration, which will increase FDI. However, the effect of the euro is not the same for each country – member of the Eurozone, as it depends on the location advantages that these countries have. To examine this parameter, namely how the participation of Greece in the Eurozone in 2002, affects FDI, a dummy variable is used.

The data were processed through the econometric analysis in order to identify what are the factors that help the country to attract foreign direct investment and what should be done from now on to increase incoming FDI. This analysis was performed for the above variables using the STATA program. The equation of the model has the following form:

$$FDI_t=f(GNI_t+ER_t+ULC_t+TL_t+TE_t+IR_t+OP_t+CTR_t+E_t) \quad (1)$$

$$(+) \qquad (-) \quad (+) \quad (+) \quad (+) \quad (+) \quad (-)$$

(Expected signs)

where:

FDI_t = Inward Foreign Direct Investment in Greece
GNI_t = Gross National Income
ER_t = Exchange Rate (Euro - Dollar)
ULC_t = Unit Labour Costs
TL_t = Telephone Lines per 100 persons
TEt = Number of Patents, as a variable on the approximation of technological skills
IRt = Interest Rate, as the difference between the nominal lending rate in Greece from the nominal interest rate in Germany
OPt = Openness of the Economy, as the sum of exports and imports
TRt = Tax Rate on Corporate Profits
Et = Dummy for Greek participation in the Eurozone (EMU) from 2002

III. Empirical Results

The econometric model was estimated by the method of least squares (pooled OLS). However, in order to see if there are omitted variables, irrelevant variables, or non-linearity and errors in measurement of variables, the model was tasted and it was found to be non-biased [32]. Furthermore the model was tasted for multicollinearity and autocorrelation, which were in turn corrected.

Table I shows the results of the regressions. At the first column (OLS1), shows the relationship of variables and their impact on FDI. In the second column (OLS2) the final results of the regression are presented, after correcting the problem of multicollinearity and autocorrelation.

Estimating the model, subtracting the variables which interact with each other by not allowing to show the clear positive influence of these factors on inward FDI, reveals that the statistically significant variables are *gross national income* (GNI) and *exchange rate (euro - dollar)* (ER), *openness of the economy (exports and imports)* (OP), while *unit labour cost* (ULC), *tax rate on corporate profits* (CTR) and the *effect of EMU* (E) are statistically significant factors, but negatively associated with FDI.

Therefore gross national income positively affects inward foreign direct investment. This means that investors prefer to provide their capital in a country which is flourishing [18]-[23]. Thus, creating a subsidiary company in a foreign country, when the economic growth of this country has increased, this action provides a lot of benefits to the investors as they reduce their costs, gain larger market share and have profits.

TABLE I: REGRESSION ESTIMATION BY OLS METHOD

	(OLS1)	(OLS2)
Variables	FDI	FDI
GNI	0.044**	0.043***
	(0.019)	(0.008)
ER	2.449	2.118**
	(1.487)	(0.771)
ULC	-0.124***	-0.054***
	(0.043)	(0.011)
TL	0.145*	
	(0.080)	
TE	0.003	
	(0.006)	
IR	0.005	
	(0.055)	
OP	0.098**	0.043**
	(0.042)	(0.021)
CTR	-11.581*	-5.394*
	(5.891)	(2.882)
E	-1.678**	-1.337**
	(0.753)	(0.500)
Constant	-8.381*	-5.172**
	(4.696)	(2.162)
Observations	32	32
R-squared	0.649	0.793

Robust standard errors in parentheses
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Exchange rate, also positively affects the incoming FDI. As the domestic currency appreciates, inward FDI increases. Another factor found to affect positively the FDI is the openness of the economy which means that as international trade increases, the more investment enters the country.

In contrast, unit labour cost appears to be negatively correlated with inward FDI, which shows that the lower labour costs, the smaller the total cost for a company, resulting in increased performance and profit, making the company to want to invest in this country. Furthermore, the tax rate on corporate profits is negatively related to FDI. Thus, multinational companies are prevented from investing in a foreign country where there is an increased taxation on corporate profits.

Finally, we examined the effect of the participation of Greece in the Eurozone (EMU) in FDI. These two factors are negatively related and this relation is statistically significant. The remaining variables are not statistically significant so they do not affect inward FDI.

IV. CONCLUSION

Inward foreign direct investment is an important tool for economic growth and economic strength of a country. So, it seemed that the gross national income, exchange rate and openness of the economy have a positive effect on inward foreign direct investment. On the contrary, unit labour cost, tax rate on corporate profits and Greece's participation to the Eurozone (EMU), seem to have a negative impact on FDI. The above conclusion is in line with the studies conducted by [18], [26]-[27].

In particular it should be pointed out that there is an interaction between FDI and development of the economy of Greece, as well, as more developed and stable the country becomes, the more companies want to invest in Greece. Furthermore, as the multinational companies want to have large returns from an investment with the smallest possible cost, they expect to face low unit labour costs and low tax rates on corporate profits in the host country.

These significant factors give a possible explanation why Greece is not attractive for FDI The fact that Greece is a small country with macroeconomic imbalances, political changes and continuous changes in taxation, creates an unfriendly environment for inward FDI.

The negative impact of EMU on FDI indicates that although Greece has several location competitive advantages, these had not been exploited properly because of the unstable political and economic situation that exists in the country. Thus multinational companies prefer to invest in other European countries and to export their products to Greece, rather than to produce them in Greece.

It is therefore concluded that in order to invest in a country, multinational companies take into consideration the competitive advantages of the country as well as its political and institutional situation. At this point it should be pointed out that Greece could attract foreign direct investments, only through the creation of a stable and economic development path with low labour costs, low tax rate on corporate profits and through the adoption of an long run strategy giving incentives for inward FDI.

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