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## The Role of Insurance in Attracting FDI to Algeria

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### Abstract

This study has addressed the role of insurance in attracting and encouraging foreign direct investment in Algeria during the period (1970-2011) based on the standard model-based on the use of regression method of ordinary least squares (OLS) to estimate model parameters, a set of variables statutory function of insurance on foreign direct investment, and economic variables of the growth rate of real GDP, inflation rate, degree of economic openness, balance the general budget as a percentage of GDP, and the political changes of the degree of political stability. Has concluded that there is one variable is linked to foreign direct investment relationship positive is insurance, while the rest of the variables are associated with the relationship of a negative, but it is there from his interpretation of significant and there are those who do not achieve this, it is through the test of significance parameters estimated can be accepted moral both hard and insurance and the rate of GDP growth and budget balance as a percentage of GDP and the degree of economic openness and the degree of political stability, and therefore are the explanatory variables for foreign direct investment by the estimated model.

**Keywords:** Insurance on FDI, Foreign Direct Investment.

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## **1. Introduction**

One of the economic problems of developing countries is that they don't have enough national savings to finance their investments. They are in constant need of foreign capital in form of direct and indirect investment. Initially, they took loans from international organizations such as: International Monetary Fund and World Bank. But in the 1980s the drying-up of international organizations lending, because of debt crises, forced many countries such as Algeria to reform their investment climate and policies so as to attract more stable forms of foreign capital, and FDI appeared to be the easiest way to get foreign capital without risks linked to the debts.

When the availability of security and stability in the host country becomes the leading factors that attract foreign direct investment, interested countries moving towards looking for ways to protect their investments against the various risks they may face. Perhaps the most important of these means is the assurance that FDI is provided by a domestic or foreign organization. Developing countries, including Algeria as a model from which confronts challenges of development, implements policies and economic and financial reforms to encourage foreign direct investment to take advantage of its benefits.

The main purpose of this paper is thus to identify the relative importance of insurance on FDI and other indicators for FDI flows. More specially, the effects of insurance on FDI, growth rate of real GDP, inflation rate, and the degree of political stability are examined. The paper is structured as follows: The data set and the variables used in the regression are explained in following section. In section 3, the estimation strategy and the specification of the model are explained. Section 4, concludes.

## **2. Data and Variables :**

- a- Methodology:** In order to achieve the purpose of this study, it will be relying on the standard model based on multi- regression method using ordinary least squares (OLS) to estimate model parameters, and using software (SPSS).
- b- Data:** The study is based in data on the statistical reports of the International Monetary Fund (IMF), the World Bank (WB), UNCTAD (UNCTAD), and the international Country Risk Guide (ICRG), in addition to the annual reports of the Foundation Arab Investment Guarantee Corporation and Export Credit and the International Agency for Investment Guarantee.

### 3. Literature review

**Dependent Variable:** FDI flows in Algeria. The data about this variable are taken from annual reports of United Nations Conference on Trade and Development.

**Independent Variables:**

- **Insurance on FDI:** Insurance is one of the best legal methods to protect FDI of non-commercial risks, and through the investor to compensate the contractor for damages that may be caused as a result of one of the risks covered by the insurance contract. Has been focusing on this variable in the study on the grounds that without the availability of safety required for the foreign investor will not accept to invest his money outside his native country . The data on insurance on FDI flows in Algeria are taken from the annual reports of the Multilateral Investment Guarantee and the Arab Investment and Export Credit Guarantee Corporation. The hypothesis has been formulated as follows:

**H<sub>1</sub>:** There is a positive relationship between insurance of FDI and inward foreign direct investment.

- **The Growth Rate of GDP :** the growth rate of GDP represents one of the main indicators used by investors in making their investment decisions , has been a contributing factor in the emergence of a group of emerging economies , and increase their ability to attract high levels of foreign direct investment flowing to developing countries , and that on the grounds that the rate of growth in GDP is a measure of the size of the domestic market and increase means an increase in aggregate demand , so expect a positive relationship between him and the increase in the flow of foreign direct investment. The data about the rate of growth of GDP are taken from statistics published by the International Monetary Fund. Several studies have shown that the importance of GDP in attracting FDI. For example, the study conducted by "**Joseph Djaowe**" 2009 in the countries of the General Economic and Monetary Community of Central African States (CEMAC) found that the rate of growth of real GDP active role in attracting foreign direct investment to these countries. Consequently, based on this overview of the related literature, the hypothesis has been formulated as follows:

**H<sub>2</sub>:** There is a positive relationship between the growth rate of GDP and inward foreign direct investment.

- **Inflation Rate:** The high inflation rates manifestation of economic instability, it also creates a state of uncertainty about the stability of the current account and the capital, and adversely affect the flow of foreign direct investment, as the increase of wages and the cost of operations and thus higher prices of final goods, and perhaps the rise price higher than the rise in the cost of production, goods and becomes the host country less competitive in international markets. The data about this variable are taken from statistics published by the International Monetary Fund .Several studies have shown that the negative effect of high inflation rates in attracting FDI. For example, the study of Kamel Abdellah (2009), which included North African countries, found that high inflation rates have a negative impact on

the flow of foreign direct investment to these countries. Consequently, based on this overview of the related literature, the corollary hypothesis is as follows:

**H3:** There is a negative relationship between inflation rate and inward foreign direct investment.

**-The Budget Balance as a Percentage of GDP:** The balance of the general budget is one of the most important indicators for measuring the internal balance of the host country, also represents one of the most important indicators of economic policy, where the economies are stable aims to reduce the deficit in their budgets to the extent that it could be financed without generating inflationary pressures. Therefore, the foreign investor is interested in knowing the balance of the budget in the state that wants to invest his money where , on the grounds that the state deficit in its budget to take restrictive measures may not be in the interest of the foreign investor to forego turning a profit . The data of this variable are taken from statistics published by the International Monetary Fund and the World Bank. Many empirical studies including the study of Torki Elfawaz (2006) which was on the existence of a negative impact on the budget deficit for inward foreign direct investment. Consequently, based on this overview of the related literature, the corollary hypothesis is as follows:

**H4:** There is a negative relationship between the budget balance as a percentage of GDP and inward foreign direct investment.

**- The Degree of Economic Openness:** open economy is the economy in which the proportion of foreign trade to GDP, and the view of many economists that there is a positive relationship between the volume of foreign trade, especially exports, and between the flow of FDI, due to the high volume of trade is granted foreign companies an opportunity for the production and distribution in the geographic areas enjoy actively growing in the field of export and import, and thus achieve high returns. The data about this variable are taken from statistics published by the International Monetary Fund and the World Bank. Many studies including the study of Likro (1991) that the degree of economic openness is a positive factor for attracting foreign direct investment. Consequently, based on this overview of the related literature, the corollary hypothesis is as follows:

**H5:** There is a positive relationship between the degree of economic openness and inward foreign direct investment.

**- The degree of political stability:** political stability plays an important role in the investment decision, the foreign investor does not accept the risk of his money in an environment characterized by instability and insecurity, and this has been confirmed by many international experiences. It is intended to political stability lack of conflicts or civil wars in the host country , as it is linked to the regime adopted, where the flows of foreign direct investment in countries that embrace the concepts and policies of economic freedom. So expect a positive relationship between the degree of political stability and the increase in the flow of foreign direct investment, higher the degree of stability of the host country the higher FDI flows to

him and vice versa. The data about this variable are taken from statistical reports of the International Country Risk Guide (ICRG) .

Many studies affected the flow of foreign direct investment to the availability of political stability in the host countries, where the study of Joseph Djaowe (2009) confirmed that political stability is a key determinant (selected first or second) for the flow of foreign direct investment to the host countries. Consequently, based on this overview of the related literature, the corollary hypothesis is as follow:

**H7:** There is a negative relationship between political risks and inward of foreign direct investment.

#### **4. Methodology**

This research has been relying initially on time series data collected for the period (1970-2011) as shown in appendix1 to estimate the parameters of the model, and after extracting the multiple linear regression model; level of significance of 5% using a program (SPSS), observed a correlation strong and significant between some of the independent variables by relying on the coefficient of variation of inflation (VIF) for each variable of the independent variables, which must be worth less than 5 of the judgment that there is no correlation of linear, as shown by the following table:

**Table 1: Coefficients**

Variables	VIF	Sig.
INS	2,544	,586
GDP	-2,137	,155
INF	-1,140	,000
BD	-2,215	,008
PS	-7,019	,000
EO	-2,209	,076

**Source:** "table has been prepared based on the outputs of the program (SPSS)"

Note of during the previous table that the value of Variance Inflation Factor (VIF) for each of the two independent variables degree of political stability (PS) and the degree of economic openness (EO) has reached 7,936 and 7,830 , respectively, which is greater than 5 , which indicates the existence of linear correlation between these two variables . The level of significance of three independent variables : the growth rate of gross domestic product (GDP) and inflation (INF) and the balance of the general budget as a percentage of GDP (BD) has hit

.586 , .155 and .076 , respectively, which is greater than the significance level of 5 % .

It is known that the negative effects of having a linear correlation between the independent variables: the instability of the regression coefficients, in addition to the lack of reliability of the recipe for these transactions. To avoid these negative effects we calculate the arithmetic mean and standard deviation of the data series of independent variables associated with strongly correlated with each other, then delete the data values of some years , which include abnormal negative effect on the model of the study. Accordingly, the data is deleted the following years: 1970,1971, 1972,1976,1978,1988, 1990,1991,1992,1993,1994,1995,1996 , due to the following reasons :

- The period between 1970 and 1972, the first implementation of the planned quartet (1970-1973) which is monitoring the amount of 35 billion Algerian dinars, which had positive results from the high rate of GDP growth to unprecedented levels averaged 8.3 % between 1970 and 1972, so the data is deleted these years of the study period as does not reflect the general economic situation of the Algerian economy.
- 1978 saw the growth rate is also high GDP stood at 9.2 % as a result of higher oil prices and increased production from 22.8 million tons in 1963 to 63 million tons in 1979.

-1988 saw a growth rate of negative GDP stood at -1% as a result of the low price of a barrel of oil from \$ 27 in 1985 to \$ 13 in 1986 , which led to a decline in state revenue from oil exports , and showed how fragile the Algerian economy adopted in funding this type of exports.

- The period between 1990 and 1996, a significant rise in inflation is mainly due to the liberalization of prices after they determine administratively , in addition to reducing the exchange rate in 1990 and 1991 , resulting in a higher rate of inflation during this period to reach its peak in 1992 at a rate of 31 0.7 % . Therefore, these data have been deleted years of the study period as does not reflect the general economic situation of the Algerian economy.

After deleting the data of previous years has become a period of study includes data series intermittent stretching from 1973 to 1977, from 1979 to 1987.1989, and from 1997 to 2011.

## **5. Finding**

### **Empirical Specification and Results:**

#### **a. Model :**

The present study utilizes a variety of data sources in order to investigate the hypotheses formulated above using multiple regression analysis.FDI in Algeria serves as the independent variable. Insurance on foreign direct investment, and economic variables of the growth rate of real GDP, inflation rate, degree of economic openness, balance the general budget as a percentage of GDP, and the political changes of the degree of political stability are the independent variables. The present research does acknowledge that many other variables like currency convertibility and cost of production, etc. are potentially significant determinants of FDI in any given market. However this study does not consider them for purposes of both simplicity and in the ability to assess the effects of the identified variables.

This study applies a Multiple Linear Regression Model to examine the determinants of foreign direct investment flows into the economy of Algeria. This model analyzes the effect of a number of insurance of FDI and economic and political variables by using the following form:

$$FDI = B + b_1INS + b_2GDP - b_3INF + b_4BD + b_5EO - b_6PS + U$$

Where:

**FDI:** Inwards foreign direct investment to Algeria.

**B:** Constant equation.

**b<sub>1</sub>, b<sub>2</sub>,...,b<sub>6</sub>** : Coefficients of independent variables.

**INS:** Insurance FDI.

**GDP:** The growth rate of GDP.

**INF:** Inflation rate.

**BD:** Budget balance as a percentage of GDP.

**EO:** Degree of economic openness.

**PS:** The degree of political stability.

**U:** Independent variables other than those listed in the equation.

**b- Results:**

We can summarize the results in the following table:

**Table 2:** Regression Results

<b>Independent variables</b>	<b>Regression coefficients</b>	<b>Significance level</b>	<b>T-test</b>
INS	0.202	0,018	2,544
GDP	-0.195	0,043	-2,137
INF	-0.107	0,266	-1,140
BD	-0.197	0,037	-2,215
EO	-0.308	0,037	-2,209
PS	-1.028	0,000	-7,019
<b>Statistic</b>	<b>Value</b>		
R <sup>2</sup>	0.881		
F	28.332		
Significance level	0.000		
DW	1.971		

**Note :** P <0.05

**Source:** "table has been prepared based on the outputs of the program (SPSS)"

We can analyze the results obtained from the previous table in the following points :

- As can be seen from the results reported in column 9 of table 2 , the  $R^2$  for the regression equation was 0.881 , indicating that the independent variables explain 88.1% of dependent variable, inwards FDI to Algeria, and the rest 11.9% was due to other factors. The overall results were determined to be statistically acceptable.
- The table 2 shows also, the DW statistic is substantially less than 2, (DW=1.971) , this confirms that there is no correlation between Residuals.
- The results of the analysis show that out of the six specified independent variables, five were significantly related to the dependent variable, inwards FDI to Algeria. Insurance on foreign direct investment was one of five independent variables that were found to be significant predictors of FDI, the result consistent with the accepted view that insurance in a host country is a key consideration that affects inward FDI in the country in question.
- There is a positive and significant relationship between the insurance on foreign direct investment and inward FDI at the level of significance of 5%, this result is similar with economic theory. Also, it is in agreement with the hypothesis  $H_1$ .
- There is a significant but negative relationship between the growth rate of GDP and inward FDI at the level of significance of 5%, and this result is not similar with economic theory. Also, it is in disagreement with the hypothesis  $H_2$ . This may be due to the renter nature of the Algerian economy, despite the improvement in levels of economic growth, but the structure is still based on fuel prices, which does not reflect well the size of the market demand Algerian who suffers from a continuous decline in the purchasing power of consumers.
- There is a negative and not significant relationship between inflation rate and inward FDI , which may be due to the fact that the majority of foreign companies present in Algeria is active in the hydrocarbon sector due to the high profitability in addition to the products , particularly oil are priced in dollars . This result is similar with economic theory. Also, it is in agreement with the hypothesis  $H_3$ .
- There is a negative and significant relationship between Budget balance as a percentage of GDP and inward FDI at the level of significance of 5%, this result is similar with economic theory. Also, it is in agreement with the hypothesis  $H_4$ . This result may be due to:  
**a** . That the general budget in Algeria is still primarily funded from oil revenues, which boosted more in recent years as a result of the continuing rise in oil prices, so it is due Index improved internal balance expressed with the budget as a percentage of GDP to rise in oil prices, and this would threaten the stability of the base financial state, and thus a negative impact on the investment climate and thus attract FDI to Algeria.  
**b** . That the general budget in Algeria has recorded a deficit of over half of the period studied, which reflected negatively on the flow of FDI to Algeria.
- There is a significant but negative relationship between the degree of economic openness and inward FDI at the level of significance of 5%, this result is not similar with economic theory. Also, it is in disagreement with the hypothesis  $H_5$ . This result may be due to:  
**a** . Frequent procedures imposed on the processes of foreign trade through the ports , which represent in the aggregate 95% of the operations of foreign trade , according to Environment Index business performance for the year 2012 , we find that the number of documents needed to export one shipment is 8, which means waiting for 17 days , and to bear the cost of 1248



dollars , also estimated the number of documents required to import one shipment to 9 , which means waiting for 27 days , and to bear the cost of \$ 1318 dollars , but no doubt that the weight of the necessary procedures for import and export operations and the high cost is an obstacle to access to various international markets and attract foreign direct investment.

**b .** The rigidity of the structure of Algerian exports, which are still based on exports of hydrocarbons primarily, despite the reforms adopted by Algeria and of directing the structure of production towards export rather than import substitution policy.

- Concerning the degree of political stability, the negative and significant relationship between them and inward FDI at the level of significance of 5%, this result is similar with economic theory. Also, it is in agreement with the hypothesis  $H_6$ .

## **6. Conclusion**

Foreign direct investments are the most desirable form of capital inflows to emerging and developing countries because they are less susceptible to crises and sudden stops. The objective of this study was to analyze the determinants of foreign direct investment in Algeria during the period (1970-2011) based on the standard model-based on the use of regression method of ordinary least squares (OLS) to estimate model parameters.

According to our analysis: there is one variable which is linked to foreign direct investment relationship positive is insurance, while the rest of the variables are associated with a negative relationship, but it is there from his interpretation of significant and there are those who do not achieve this, it is through the test of significance parameters which estimated that it can be accepted both insurance and the rate of GDP growth and budget balance as a percentage of GDP and the degree of economic openness and the degree of political stability, and therefore are the explanatory variables for foreign direct investment by the estimated model.

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