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THE IMPACT OF FINANCIAL LIBERALIZATION ON FOREIGN DIRECT INVESTMENT: EMPIRICAL EVIDENCE FROM ALGERIA

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ABSTRACT

The topic of the financial liberalization becomes at once a thorny and debatable issue. This consideration comes from the position held by the financial system in the economic cycle and its paramount effects of smoothing the consumption and the investment decisions. Liberalizing financial system is a strategy based on alleviating the barriers imposed on the financial system and letting it work according to the market-based discipline as advocated by McKinnon (1973) and Shaw (1973). This paper attempts to study the impact exercised by the financial liberalization on foreign direct investment in Algeria during the period 2000-2015 by using PLS-SEM approach. The study concludes that the relationship between financial liberalization and foreign investment is negative, which proves that the foreign investment in Algeria is conducted by other variables than the financial system on one hand, and on the other, the Algerian financial system is not liberalized enough to constitute a solid attractive platform for the foreign investment.

- INTRODUCTION

The financial liberalization is considered literally as a strategic reform of the financial system in order to increase its efficiency in financing the consumption and the investment decisions of the economic agents (John Williamson et al, 1998; Philipp Harms et *al*, 2003; Abdul Abiad et al, 2005; Frederic S. Mishkin, 2007). The argument of the financial liberalization had been advocated by the works of McKinnon (1973) and Show (1973) who claimed that the financial repression is the prime cause of lower growth and it may hamper the flow of capital necessary for the economic development. The financial system under the repressed regime is sub-optimal, the facts that leads to a high inefficiency in financing the economy and undermines the true value of the financial capital. In his influential book Money and Capital in Economic Development (1973), McKinnon highlights that the government intervention in the financial system causes problems in financing the economy; and as a consequence, the financial capital inside and outside the economic cycle is undervalued:

> But organized banking has a sorry record in penetrating the economic hinterland of less developed countries (LDCs), in serving rural areas in general, and in serving small borrowers in particular. Bank credit remains a financial appendage of certain enclaves: exclusively licensed import activities, specialized large-scale mineral exports, highly protected manufacturing, large international corporations, and various government agencies, such as coffee marketing boards or publicly controlled utilities. Even government deficits on current account frequently preempt the limited lending resources of the deposit banks. Financing of the rest of the economy must be met from the meager resources of moneylenders, pawnbrokers, and cooperatives. It is this

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phenomenon that I call financial repression

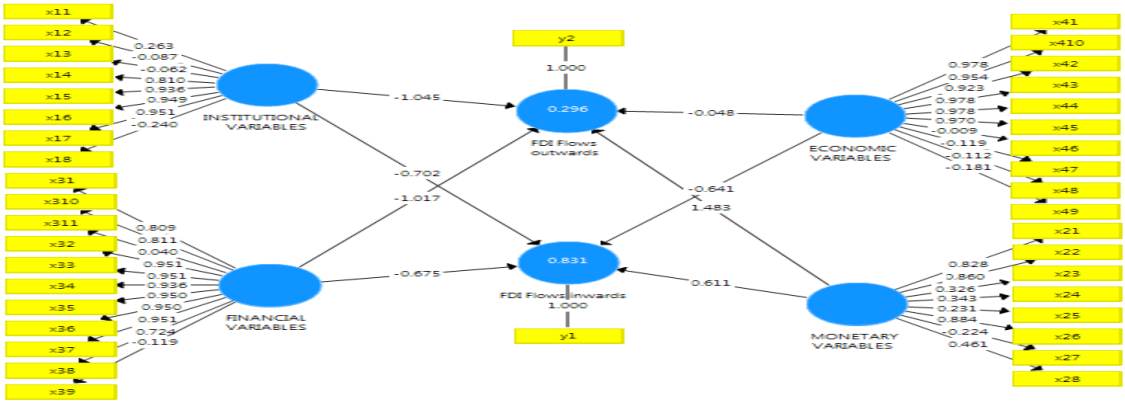
McKinnon in *Money and Capital in Economic Development*: 68-69

According to the above excerpt, the financial repression diminishes the working efficiency of the financial system because of the coercive criteria underpinning the financial system under this regime. According to Caprio et *al* (2001), the repressed financial system has many negative impacts of the smoothly functioning of the economy like: inhibiting the economic growth because of the lower financing efficiency, higher costs of the financial capital and the pervasive insolvencies of the financial institutions under the financial repression regime, the difficulty to get financial resources especially for small firms because lending under this regime is not conducted by economic criteria but by corruptive measures like favoritism, bribery and discrimination. In addition to this, the repressed system reduces harshly the control and the monitoring process on the financial resource allocation due to the state intervention and the *bad* criteria characterizing the financial repression (Prem S. Laumas, 1990; .

- **MODEL OF THE STUDY:**

The study attempts to highlight the impact exercised by the financial liberalization on foreign direct investment in Algeria during the period 2000-2015. The approach adopted is PLS model because of their capacity to handle the latent variables through a system of regression equations and its flexibility to deal with samples with different sizes. The model of the study comprises 41 variables with six (6) reflective variables and the estimates of the model are represented by the following:

FIGURE. 1: THE ESTIMATES OF THE MODEL



SOURCE: The Researchers based on SMART-PLS 3

The reliability of the model to examine the impact of the financial liberalization on foreign direct investment is portrayed by the following table:

TABLE. 1. THE RELIABILITY RESULTS OF THE MODEL:

The Conceptual Model	Items	Loading	Alpha Cronbach	CR	AVE
Institutional Variables	**X11**	**0.263**	0.873	0.868	0.563
	X12	**-0.087**			
	X13	**-0.062**			
	X14	0.810			
	X15	0.963			
	X16	0.949			
	X17	0.951			
	X18	**-0.240**			
Monetary Variables	X21	0.828	0.596	0.724	0.344
	X22	0.860			
	X23	**0.326**			
	X24	**0.343**			
	X25	**0.231**			
	X26	0.884			
	X27	**-0.224**			
	X28	**0.461**			
	X31	0.809			

Financial Variables	X32	0.811	0.923	0.944	0.658
	X33	**0.040**			
	X34	0.951			
	X35	0.936			
	X36	0.950			
	X37	0.950			
	X38	0.951			
	X39	0.724			
	X310	**-0.119**			
Economic Variables	X41	0.978	0.873	0.868	0.563
	X42	0.923			
	X43	0.978			
	X44	0.978			
	X45	0.970			
	X46	**-0.009**			
	X47	**-0.119**			
	X48	**-0.112**			
	X49	**-0.181**			
	X410	0.954			

CR: Composite Reliability; AVE: Average Variance Extracted
Source: the researcher based on SmartPLS3

The Institutional Variables are measured by using 18 items where their loadings vary between accepted to unaccepted levels. Items having loadings more than 0.7 are: X14, X15, X16 and X17. The loading of the items X11, X12, X13 and X18 vary between the values of 0.062 and 0.263 which are below the Standardized Indicator Loading (0.4). As a consequence, these items (manifest variables) are omitted from this latent variable (Institutional Variables).
With regard to the construct of the Monetary Variables, the indicators X21, X22, X26 show satisfactory loading values greater than 0.7 while the indicators X23, X24, X25, X27 display values varying between -0.224 and 0.343 which are much less than 0.4. As a consequence, these items are omitted from this reflective latent variable. Additionally, the item X28 has a loading value of 0.461which is within the interval of the values 0.4 and 0.7. The omission of this variable leads the AVE (Average Variance Extracted) to be above the threshold of 0.5 and an increase in the CR (Composite Reliability) is recorded. Therefore, these items are eliminated from this latent variable (Monetary Variables)
About the construct of the Financial Variables, all its indicators exhibit satisfactory loading values greater than 0.7 except the indicators X33 and X310. These present loading values varying between -0.119 and 0.040 which are much less than 0.4. As a consequence, these items are omitted from this reflective latent variable (Financial Variables)
As for the construct of the Economic Variables, the items X41, X42, X43, X45 and X410 present satisfactory loading values greater than 0.7 while the other items: X46, X47, X48, X49 show values varying between -0.009 and -0.181 which are much less than 0.4. This situation leads to delete these items from this reflective latent variable (Economic Variables)

- **MULTICOLLINEARITY DETECTION:**

In this context, the Multicollinearity is detected by using VIF (Variance Inflation Factor) which must to be less than 10 in some studies and in other, it is preferable for the Variance Inflation Factor to be under 5. The following table includes variables with VIF less than 10 (variables with no Multicollinearity problem)

TABLE.2: VARIABLES AFTER MULTICOLLINEARITY DETECTION

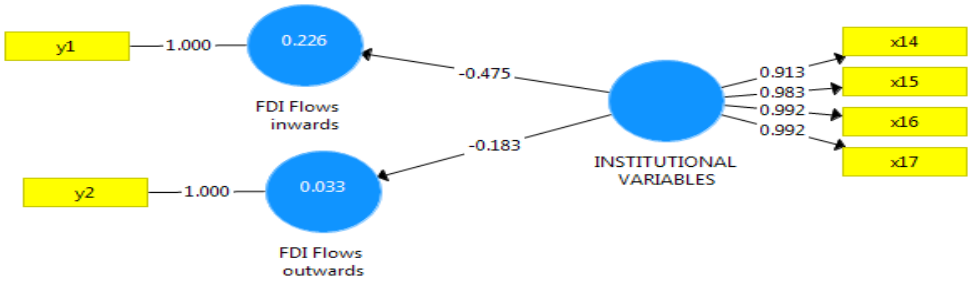
The Conceptual Model	Items	VIF
Institutional Variables	X11	1.867
	X12	3.717
	X13	2.734
	X14	7.630
	X18	3.670
Monetary Variables	X21	4.56
	X24	6.272
	X25	9.413
	X27	7.168
Financial Variables	X31	3.389
	X39	4.871
Economic Variables	X46	5.697

SOURCE: the researcher based on Smart PLS 3 estimation

- **THE PARTIAL IMPACT OF THE INSTITUTIONAL VARIABLES ON FOREIGN DIRECT INVESTMENT:**

In an attempt to test the impact of the Institutional Variables on both the Inflows and Outflows of Foreign Direct Investment Flows, several causalities (relationships) are established to get an appropriate model as it is represented by the following figure:

FIGURE. 1. THE STRUCTURAL MODEL OF THE INSTITUTIONAL VARIABLES4 IMPACT ON THE INFLOWS AND OUTFLOWS OF FDI



SOURCE: The Researchers based on Smart PLS 3

From the figure above, it is evidently observed that 22.6% of the variance explaining the Inflows of Foreign Direct Investment is due to Institutional Variables' construct of the Financial Liberalization. This proportion is large compared to that of 3.3% which represents the variance impact of the Institutional Variables on the Outflows of Foreign Direct Investment. In order to estimate the path modelling factors, the following table shows the values of the Sample Direct Effect, Average of the Sample Direct Effect, Student Statistics and the P values for Student Statistics:

TABLE.1. TEST OF SIGNIFICANCE FOR THE DIRECT IMPACT OF THE STRUCTURAL MODEL LATENT VARIABLES

Index / Direct Impact	Original Sample	Sample Mean	Standard Deviation	T Statistics	P Values	The Direct Impact Significance
Institutional Variables → Inwards of Foreign Direct Investment	-0.475	-0.505	0.208	2.286	0.023	**
Institutional Variables → Outwards of Foreign Direct Investment	-0.183	0.178-	0.191	0.955	0.340	NS

Note:

NS: Not Significant; * Significant at 0.001; ** Significant at 0.05; *** Significant at 0.1

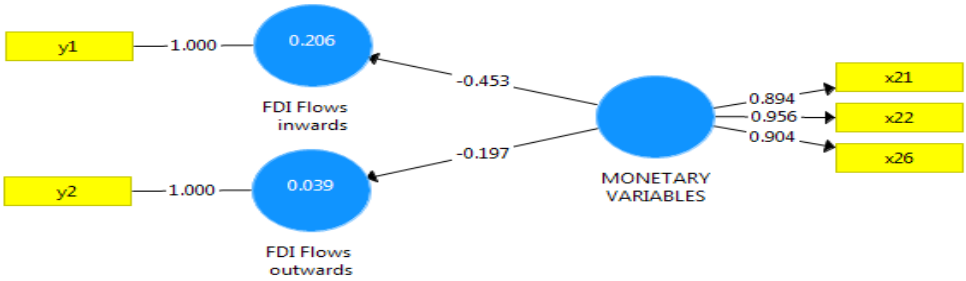
SOURCE: the researchers based on Smart PLS 3

The table indicates that the direct impact of the Institutional Variables on the Foreign Direct Investment Inflows is estimated at **-0.475** which means that the effect is negative and significant at **0.05**. At the other side, the direct impact of the Institutional Variables on the Foreign Direct Investment Outflows is recorded by the value of **-0.183**. This value means that the impact is negative and non -significant. The results provided by the table above indicate that the relationship between the Institutional Variables and the Inflows of Foreign Direct Investment is negative. This statement could be expressed differently as the increase of the Institutional Variables leads to a decrease in the Foreign Direct Investment Inflows.

- **THE PARTIAL IMPACT OF THE MONETARY VARIABLES ON FOREIGN DIRECT INVESTMENT:**

In order to test the impact of the Monetary Variables on both the Inflows and Outflows of Foreign Direct Investment Flows, several causalities (relationships) are established independently to have an appropriate model presented by the following figure:

FIGURE. 2. THE STRUCTURAL MODEL OF THE MONETARY VARIABLES IMPACT ON THE INFLOWS AND OUTFLOWS OF FDI



SOURCE: The Researchers based on Smart PLS 3

The figure above indicates that **20.6%** of the variance explaining the Inflows of Foreign Direct Investment is related to the Monetary Variables' construct of the Financial Liberalization. This Percentage is greater than the proportion of **3.9%** which represents the variance impact of the Institutional Variables on the Outflows of Foreign Direct Investment. In an attempt to estimate the path modeling factors, the following table shows the values of the Sample Direct Effect, Average of the Sample Direct Effect, Student Statistics and the P values for Student Statistics:

TABLE. 2. TEST OF SIGNIFICANCE FOR THE DIRECT IMPACT OF THE STRUCTURAL MODEL LATENT VARIABLES

Index / Direct Impact	Original Sample	Sample Mean	Standard Deviation	T Statistics	P Values	The Direct Impact Significance
Monetary Variables → Inwards of Foreign Direct Investment	-0.453	-0.496	0.190	.2381	0.018	**
Monetary Variables → Outwards of Foreign Direct Investment	-0.197	-0.224	0.170	1.160	0.247	NS

Note:

NS: Not Significant; * Significant at 0.001; ** Significant at 0.05; *** Significant at 0.1

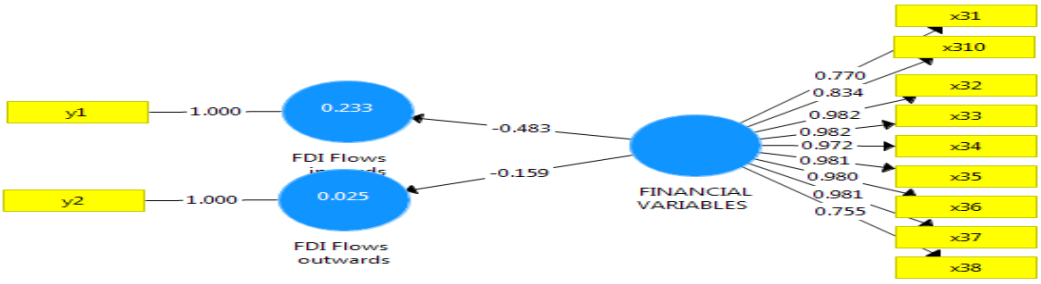
SOURCE: the researchers based on Smart PLS 3

The table illustrates that the direct impact of the Monetary Variables on the Foreign Direct Investment Inflows is measured by **-0.453**. This value reflects a negative and significant impact of these two variables at **0.05**. In addition to this, the impact of the Monetary Variables on the Foreign Direct Investment Outflows is estimated at the value of **-0.197** which is negative and non- significant. This report means that the relationship between the Monetary Variables and the Inflows of Foreign Direct Investment is significantly negative, i.e. that the increase in Monetary Variables leads to a decrease in the Inwards of Foreign Direct Investment.

- **THE PARTIAL IMPACT OF THE FINANCIAL VARIABLES ON FOREIGN DIRECT INVESTMENT:**

To test the relationship between the construct of the Financial Variables and the Inwards as well as the Outwards of Foreign Direct Investment, various attempts have been made to obtain the suitable model shown by the following figure:

FIGURE. 3. THE STRUCTURAL MODEL OF THE FINANCIAL VARIABLES IMPACT ON THE INFLOWS AND OUTFLOWS OF FDI



SOURCE: The Researchers based on Smart PLS 3

The figure above indicates that 23.3% of the variance explaining the Inwards of Foreign Direct Investment refers to the impact of the Financial Variables' construct. This proportion is greater than the percentage of 2.5% which explains the variance of the Foreign Investment Outwards due to the Financial Variables. In an attempt to estimate the path modeling factors, the following table shows the values of the Sample Direct Effect, Average of the Sample Direct Effect, Student Statistics and the P values for Student Statistics:

TABLE. 3. TEST OF SIGNIFICANCE FOR THE DIRECT IMPACT OF THE STRUCTURAL MODEL LATENT VARIABLES

Index / Direct Impact	Original Sample	Sample Mean	Standard Deviation	T Statistics	P Values	The Direct Impact Significance
Financial Variables → Inwards of Foreign Direct Investment	-0.483	-0.581	0.289	1.673	0.095	**
Financial Variables → Outwards of Foreign Direct Investment	-0.159	-0.264	0.233	0.684	0.494	NS

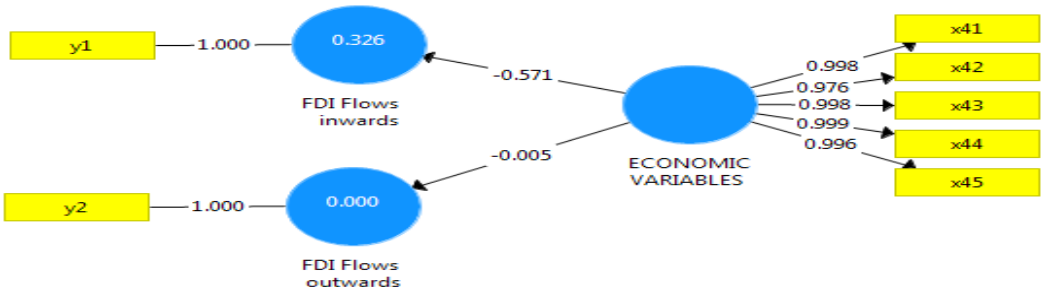
Note:
NS: Not Significant; * Significant at 0.001; ** Significant at 0.05; *** Significant at 0.1
SOURCE: the researchers based on Smart PLS 3

The direct impact of the Financial Variables on the Foreign Direct Investment Inwards is estimated by -0.483. This value is negative and significant at 0.05. At the other side, the direct impact of the Financial Variables on the Foreign Investment Outwards is represented by the value of -0.159 which is negative and non -significant. This figure means that the relationship between the Financial Variables and the Inflows of Foreign Direct Investment is significantly negative, i.e. that the increase in Financial Variables leads to a decrease in the Inwards of Foreign Direct Investment.

- **THE PARTIAL IMPACT OF THE ECONOMIC VARIABLES ON FOREIGN DIRECT INVESTMENT:**

To test the relationship between the construct of the Economic Variables and the Inwards as well as the Outwards of Foreign Direct Investment, various attempts have been made to obtain the suitable model shown by the following figure:

FIGURE. 3. THE STRUCTURAL MODEL OF THE ECONOMIC VARIABLES IMPACT ON THE INFLOWS AND OUTFLOWS OF FDI



SOURCE: The Researchers based on Smart PLS 3

The exhibit shows that 32.6% of the variance of the Foreign Direct Investment Inwards is due to the Economic Variables. This value is greater than the value of 0 which presents the variance of the Foreign Investment Outwards due to the Economic Variables. For the purpose of estimating the path modelling factors, the following table shows the values of the Sample Direct Effect, Average of the Sample Direct Effect, Student Statistics and the P values for Student Statistics:

TABLE. 4. TEST OF SIGNIFICANCE FOR THE DIRECT IMPACT OF THE STRUCTURAL MODEL LATENT VARIABLES

Index / Direct Impact	Original Sample	Sample Mean	Standard Deviation	T Statistics	P Values	The Direct Impact Significance
Economic Variables → Inwards of Foreign Direct Investment	-0.571	-0.161	0.662	0.863	0.388	NS
Economic Variables → Outwards of Foreign Direct Investment	-0.005	0.045	0.223	0.022	0.983	NS

Note:

NS: Not Significant; * Significant at 0.001; ** Significant at 0.05; *** Significant at 0.1

SOURCE: the researchers based on Smart PLS 3

According to the table, the direct impact of the Economic Variables on the Foreign Direct Investment Inwards is negative **(-0.571)** and non- significant while the impact on the Foreign Direct Investment Outwards is also negative **(-0.005)** and non- significant. This statement means that the impact of the Economic Variables on the Foreign Direct Investment is not existed

- **CONCLUSION:**

The results of the empirical study show clearly that the relationship between the financial liberalization and foreign direct investment is negative. This study is about Algeria and covers the period 2000-2015. Indeed, it includes two basic variables represented by the financial liberalization and the foreign direct investment. The number of indicators or the item used to portray these two latent variables is 39. For exploring the relationship, partial effects had been examined for each construct. In this sense, the independent variable is figured out by four distinguished constructs which are: the Institutional Construct, the Monetary Construct, the Financial Construct and the Economic Construct. After the process of the Multicollinearity detection, the number of indicators included to represent each construct had been reduced as the following: 4 (four) indicators for the Institutional Construct, 3 (three) indicators for the Monetary Construct, 9 (nine) indicators for the Financial Construct and five (5) variables for the Economic Construct. By exploring the relationship between the Foreign Direct Investment Inwards and each construct, it is found that the relationship is negative. The reasons behind this are basically due to two factors: Ideological factor and Institutional factor. For the former, it is well known that economic ideology of Algeria has not yet a clear-cut destination. In this sense, the financial liberalization paradigm requires a clear economic philosophy by which the interaction between the economic agents is obviously understood. Here, we talk about a good market economy where the market institution conducts the businesses wisely and rationally. This situation helps the process of liberalizing the financial system to be a big push to the economy. In this context, it should be noted that the bad

consequences that had been generated from the liberalizing process in some countries find their causes in the ways of how the process had been implemented in accordance with the capacity of the economy and its priorities. The second factor behind the negative relationship (the institutional factor) is no longer distinguished from the first one but it is its inevitable outcome. This statement means that the ambiguity in the economic ideology leads unavoidably to deteriorate the quality of the institutions in governing the economy. As a result, the indices that should assume the responsibility of representing correctly the economic situation do not work; and this is the fact in Algeria.

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