Foreign Direct Investment Determinants in Algeria, Evidence from Vector Error Correction Model

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Abstract

this study aims to testing and analyzing the macroeconomics variables determinants of the foreign direct investment in Algeria over the period (1980 -2012), using the coi-integration and error correction model technique,, the johansen cointegration test show that a long run relationship exists between *FDI* and its fundamentals determinants variables such as: inflation rate, degree of openness, real exchange rate and Foreign exchange reserves minus gold. The error correction model estimations results indicates that the error correction term is negative and statistically significant at 1 % level, the speed of adjustment is about 68 % yearly, also a significant causal relationship from degree of openness and real exchange rate to the *FDI* is found according to the Granger causality test, however any significant effect from GDP to the *FDI* is found

Keywords: Foreign Direct Investment, Coi-integration , Vector Error Correction Model , Algeria

1. INTRODUCTION

By bridging the gap between domestic savings and investment and bringing the latest technology and management know-how from developed countries, foreign direct investment *(FDI)* can play an important role in achieving rapid economic growth in developing countries

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One of the most important problems of developing countries is that they do not have enough national savings to finance their investments, they are is constant need of foreign capital in forms of both direct and indirect investments

Foreign direct investment (FDI) has widely become a byword for efficient investment, job creation, high wages and technological transfers from the developed countries to the developing countries. Most governments in the word have promoted generous policies to attract foreign direct investment on their soil. Using many macroeconomics polities such as monetary and fiscal policy, exchange rate regime and infrastructure reform.

Foreign direct investment in the capital transaction that a " direct investor " carries out in a foreign " direct investment enterprise " (affiliate) to obtain a lasting interest in this foreign firm and a significant degree of influence on its management . The threshold of 10 % or more-ownership of a firm's capital is in general required to be accounted for as a direct investment.

(And Algeria is among the countries that have sought to improve the investment climate and attract foreign capital through several macroeconomic policies since 1990 year such as monetary policy, fiscal policy and exchange rate policy, in this study we will try to modeling the behavior of foreign direct in Algeria during the period (1980 – 2012) , using the times series analysis

Research problem

The research problem of our study can be formulated as:

What are the fundamentals macroeconomics variables that can be considered as the determinants of FDI inflows in Algeria over the period (1980 – 2012)?

Research hypothesis

Based on the research problem we will propose the following hypothesis:

*The first hypothesis***:** the FDI inflows in Algeria is cointegrated with the fundamentals macroeconomics variables such as: inflation rate, degree of openness, gross domestic product

*The second hypothesis***:** Currency devaluation policy promote the FDI inflows

The third hypothesis: Foreign direct investment attractiveness policy depends on the coordination between the various macroeconomic policies such as: monetary policy, fiscal policy and trade policy

2. LITERATURE REVIEW AND THEORICAL FRAMEWORK

In addition to/and on the basis of the theoretical models discussed above, a number of empirical studies suggest different location specific variables that should be considered in models as determinants of FDI.

D cushman 1985 and **B.A Blonigen** 1997 studied the impact of the real exchange rate on the foreign direct investment flows, they found that the real exchange rate depreciation influence significantly the FDI flows

Campos and Kinoshita (2003) studied the factors accounting for the geographical patterns of FDI inflows among 25 transition economies using panel data for the period 1990–98 and they found out that, agglomeration economies and institutions outweigh the economic variables as the main determinants of FDI location. Economic variables such as abundance of natural resources, large markets, low labor cost, more openness to trade, external liberalization and fewer restrictions did also attract more FDI while poor bureaucracy was found to have a deterring effect**.**

Imad A. Moosa, Buly A. Cardak (2006 **)** applied extreme bounds analysis to a crosssectional sample encompassing data on 138 countries The results reveal three robust variables: exports as a percentage of GDP, telephone lines per 1000 of the population and country risk. One conclusion emerges: developed countries with large economies, a high degree of openness and low country risk tend to be more successful than others in attracting FDI.

Marial A. Yol and Ngie Teng teng (2009) investigated the determinants of FDI flows into Malaysia unsig annuel data over the period 1975 – 2006 using the cointegration and error correction model .The results of the long-run FDI equation indicate that FDI flows in Malaysia are positively influenced by exports . In the short run FDI flows are negatively influenced by its own lags , Gdp growth , infrastructure and exports , while positively affected by economy's openness and real exchange rate variables .

Bruce A Blonigen and Jeremy Piger (2011) used the bayesien statistical technique , they found that trade openness , host country business costs , host contry infrastructure (including credit market) , and host-country institutions are the fundamentals determinants of the foreign direct investments flows

Ab Quyoom Khachoo and Mohd Imran Khan (2012) studied the factors determining FDI inflows to developing countries over the period (1982 – 2008) The study is based on a sample of 32 developing countries using the panel cointegration technique . In this empirical study , The FMOLS panel cointegrating equation estimator suggests that the market size, total reserves, infrastructure and labour costs are the main determinants of FDI inflows to developing countries**.**

Micah B. Masuku and Thula S.Dlamini (2009) examined the locational determinants of FDI inflows in Swaziland over the period of 1980 to 2001 , using the cointegration and error correction model technique , they found that FDI inflows is positively influenced by economic stability , infrastructure , internal economic stability , and openness of the economy domestic market ..

Thu Thi Hoang examined the factors that determine foreign direct investment flows in vietnam's economy from 1988 to 2005 , using the ordinary least squares to estimate the FDI equation , the main results show that higher market size , GDP growth , openness to trade and better infrastructure development are factors attracting FDI inflows into Vietnam

Khondoker Abdul Mottaleb and Kaliappa Kalirajanb (2010) used panel data from 68 low-income and lower-middle income developing countries, to identify the factors that determine FDI inflow to the developing countries., the study demonstrates that countries with larger GDP and high GDP growth rate, higher proportion of international trade and with more business friendly environment are more successful in attracting FDI

ISMAIL ÇEVIS and BURAK ÇAMURDAN (2007) studied the economic determinants of FDI inflows by employing a panel data set of 17 developing countries and transition economies for the period 1989-2006 , they found that the main determinants of FDI inflows are the inflation rate, the interest rate, the growth rate, and the trade (openness) rate and FDI inflows give power to the economies of host countries .

Priscila Gomes de Castro *.et al* (2013) examined the foreign direct investment determinants in Brazil and Mexico during the period 1990 to 2010 using the Vector Error Correction Model it was noted that in Brazil the main multinationals' strategy is the market seeking - linked to the size of the domestic market- , and, in Mexico, the dominant strategy seems to be efficiency seeking, related to the importance of trade liberalization and the historical flows to attract FDI

TABLE (1) :

Relevant theory	***Major targeted dimension***	***Determinants of FDI***
International trade theory	**International allocation of production**	Availability of resources (labour , capital)
	Comparative advantages	Productivity level
	Consumer tastes	No specific studies on the consumer preferences
Theory of the firm	Optimal size of an MNE	Degree of market inefficiencies
	Transaction costs	Ability to overcome market inefficiencies
	Internalisation of imperfection markets	Market growth rate
	Ownership , location-specific advantages	Market size and per capital income
	Ideal structure of an MNE	Productivity level
Theory of the international capital markets	Origins of finance	Risk diversification
	- Funding - Risk-bearing	Risk of sales
		Risks of equity
		Interest rate
		Exchange rate

Source : KELIC .C *et al* (2014)

3. MODEL SPECIFICATION AND EMPIRICAL RESULTS

3.1 . The model specification

There are many variables that are essential in explaining *FDI* inflows; however it is not possible to include all of them. The variables in this study were chosen because of their importance especially in Algeria and availability of data, the econometric model is specified as:

$FDI = f\ (\ GDP, INFL, EXC, FD, OPEN, RES\ )$

$FDI = \alpha_0 + \alpha_1 * GDP + \alpha_2 * INFL + \alpha_3 * EXC + \alpha_4 * OPEN + \alpha_5 * FD + \alpha_6 * RES + U_t$ ….(1)

Table 2: Variables explanation

Variable	*Explanation*	*Expected sign*
FDI	Foreign direct investment flows (% of Gdp)	/
GDP	Gross domestic product (growth rate)	+
INFL	Inflation rate (% change of consumer prices index)	-
EXC	Real exchange rate	+
OPEN	Degree of openness ($\frac{export+import}{Gdp}$)	+
FD	Financial development (credit to private sector % of gdp)	+
RES	Foreign exchange reserves minus gold (billions of dollars)	+

3.2. Unit root test

The Augmented Dickey–Fuller (ADF) (1979, 1981) is used to determine the presence of unit roots in the data sets. The ADF test is based on the estimate of the following regression:

$$\Delta X_t = \delta_0 + \delta_1 t + \delta_2 X_{t-1} + \sum_{i=1}^{k} \alpha_i \Delta X_{t-i} + u_i \quad \text{.....(2)}$$

where, Δ is the first-difference operator, X_t is the observations of the series, δ_0, δ_1, δ_2, and α_i are being estimated and u_t is the error term. The null and the alternative hypothesis for the existence of unit root in variable X_t is: H_0:δ_2=0 against H_ε:δ_2<0.

Table 3 : ADF Unit Root Test

Variables	**ADF unit root test**	
	Level	**First difference**
FDI	-1.384882 **(0.1511)**	-5.950341* **(0.0000)**
GDP	-1.399142 **(0.1472)**	-5.909667* **(0.0000)**
INFL	-1.145399 **(0.2141)**	-4.804454* **(0.0000)**
EXC	-0.673009 **(0.4176)**	-6.984234* **(0.0000)**
FD	-1.208871 **(0.2028)**	-3.976460* **(0.0003)**
OPEN	-0.522611	-4.812294*

	(0.4824)	**(0.0000)**
RES	0.793504 **(0.8791)**	-4.018498* **(0.0000)**

**the null hypothesis is rejected at 1 % and 5 % level of significance*

Value between parentheses arte probabilities

The ADF test results showen in table 1 indicates that the null hypothesis of non-stationary at level cannot be rejected for all series, applying the same test for their first differences shows that the null hypothesis of a unit root is rejected in all cases at a 5 percent significance level, meaning that all series are integrated for order one I (1)

3.3. Johansen co-integration test

The Johansen and Julius λ_{trace} cointegration statistic test for testing the null hypothesis that there are at most *r* cointegrated vectors is used versus the alternative Hypothesis of more than *r* cointegrated vectors. Where: λ_{trace} is given by:

$$\lambda_{trace} = -T \sum_{\lambda=r+1}^{k} log(1 - \lambda_i)$$

Where: *T* is the available number of observations and λ_i the eigenvalues. The critical values at 5% significance level are used for testing.

Table 4 : Johansen co-integration test

Hypothesized No. of CE(s)	***Eigenvalue***	***Trace Statistic***	***0.05 Critical Value***	***Prob***
H_0 : r = 0 * **H_1 : r > 0**	0.778854	141.0967	125.6154	0.0040
H_0 : r = 1 ** **H_1 : r > 1**	0.633595	94.31991	95.75366	0.0625

**the null hypothesis is rejected at 5 percent significance level*
*** the null hypothesis cannot be rejected at 5 percent significance level*

Table 4 presents the Johansen-Juselius Co-integration test. The result shows that Trace test is statistically significant to reject the null hypothesis of r = 0 at 5%

significance level. Therefore, there is one long run co-integration relationship between Foreign Direct Investment and it determinants.

3.4. Long run relationship

Table 5: long run regression

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	**0.119690**	**0.628897**	**0.190318**	**0.8505**
GDP	**-0.001718**	**0.036304**	**-0.047322**	**0.9626**
INFL	**-0.016497**	**0.012531**	**-1.316453**	**0.1995**
FD	**-0.014840**	**0.003244*** **	**-4.574667**	**0.0001**
OPEN	**-0.001870**	**0.009735**	**-0.192093**	**0.8492**
RES	**0.002771**	**0.001384***	**2.002464**	**0.0558**
EXC	**0.018485**	**0.007878****	**2.346408**	**0.0269**
R-squared	**0.769223**	**Adjusted R-squared**		**0.715967**
F-statistic	**14.44382**	****	**Durbin-Watson stat**	**2.020118**
Prob(F-statistic)	**0.000000**			

****significant at 0.1 level **significant at 0.05 level ***significant at 0.01***

The estimation results of the long run relationship can be interpreted as:

An increase in the inflation rate of 1 % is associated with an decrease in the *FDI* inflows of about 0.0164 % , , meaning that the *FDI* inflows is negatively influenced by the inflation shocks in Algeria but this effect is not statistically significant , this results are consistent with theoretical background.

An increase in the credit FD of 1 % is associated with a decrease in the FDI inflows of 0.014 %, this effect is statistically significant at 1 % level,

An increase of the Foreign exchange reserves minus gold at 1 billion will result in an increase of *FDI* at 0.002771 % this effect is statistically significant at 10 % level, this results are consistent with theoretical background.

Finally, we conclude that the *FDI* inflows in Algeria is not statistically influenced by the *GDP* growth and Degree of openness in the long run , also the real exchange rate have a significant impact on the foreign direct investment at 5 % level of significance .

Table 6 : ADF test (residuals)

Variable	ADF Statistic	0.01 Critical Value	0.05 Critical Value
Residuals	**-5.810431****	**-2.639210**	**-1.951687**

***the null hypothesis is rejected at 0.01 and 0.05 significance level*

from the unit root test for the long run relationship residuals we conclude that the residuals series is stationary at 0.01 and 0.05 significance level, this result confirm the existence of the cointegration relationships among variables according to the Engel Granger two step method

3.5. VECTOR ERROR CORRECTION MODEL

The vector of endogenous variables included in vector error correction model can be specified as:

$X_t \left[Fdi_{t,}\ Gdp_t, Infl_t,\ Open_t, FD_t, RES_t\right]$

Therefore the Error Correction Model can be specified as:

$$\Delta Fdi=\sum_{i=1}^{p} \alpha i*\Delta\ Fdi_{\ t-i}+\sum_{i=1}^{p} \beta i*\Delta\ Gdp_{\ t-i} +\sum_{i=1}^{p} \lambda\ i*\Delta\ Infl_{\ t-i} + \sum_{i=1}^{p} \gamma i*\Delta\ Exc_{\ t-i} + \sum_{i=1}^{p} d\ i*\Delta\ Open_{\ t-i} + \sum_{i=1}^{p} \psi i*\Delta\ FD_{\ t-i} + \sum_{i=1}^{p} \rho i*\Delta\ RES_{\ t-i} + \delta*\ e_{t-1} + c + \varepsilon_t \ \ldots\ldots\ Eq\ 3$$

Where:

Δ : denotes the first difference P: are the optimal lag length determined by the Akaike information criterion (AIC), e_{t-1} : denotes Error correction term lagged by one period, this coefficient should be negative and statistically significant ε_t : white noise

After estimating the model (Eq 3) using the ordinary least squares method, we obtain the following regression:

$$\Delta Fdi = -0.6852 * e_{t-1} + 0.2089 * \Delta Fdi_{t-1} + 0.0188 * \Delta open_{t-1} - 0.0051 * \Delta Gdp_{t-1} - 0.0069 * \Delta Infl_{t-1} + 0.0142 * \Delta RES_{t-1} - 0.0024 * \Delta Fd_{t-1} + 0.0103 * \Delta EXC_{t-1} - 0.0633 + \varepsilon_t$$

Table 7 : Vector Error Correction Model

	Coefficient	Std. Error	t-Statistic	Prob.
e_{t-1}	-0.685208	0.185896***	-3.685971	0.0013
ΔFDI_{t-1}	0.208999	0.157468	1.327252	0.1980
$\Delta OPEN_{t-1}$	0.018831	0.011075	1.700300	0.1032
ΔGDP_{t-1}	-0.005198	0.025106	-0.207049	0.8379
$\Delta INFL_{t-1}$	-0.006989	0.012041	-0.580432	0.5675
ΔRES_{t-1}	0.014226	0.006939*	2.049957	0.0525
ΔFD_{t-1}	-0.002470	0.007869	-0.313861	0.7566
ΔEXC_{t-1}	0.010381	0.005652*	1.836769	0.0798
C	-0.063314	0.071010	-0.891619	0.3822
R-squared	0.651394	Adjusted R-squared	0.524629	0.524629
F-statistic	5.138570***	Durbin-Watson stat	1.921969	
Prob(F-statistic)	0.001065			

significant at 0.1 level ****significant at 0.01***

The error correction term ect_{t-1} is negative and statistically significant at 1 % level, meaning that a long run causality relationship exists from the independents variables to the dependent variable, according to the ECM estimation results we shows that the speed of adjustment in the error correction model is about 68 %, in other words This means that in the short run the deviations from the long run equilibrium relationship are corrected at 68 %. The diagnostic tests in the short run model do not seem to have any problem.

Figure 1: ECM stability test – CUSUM plot –

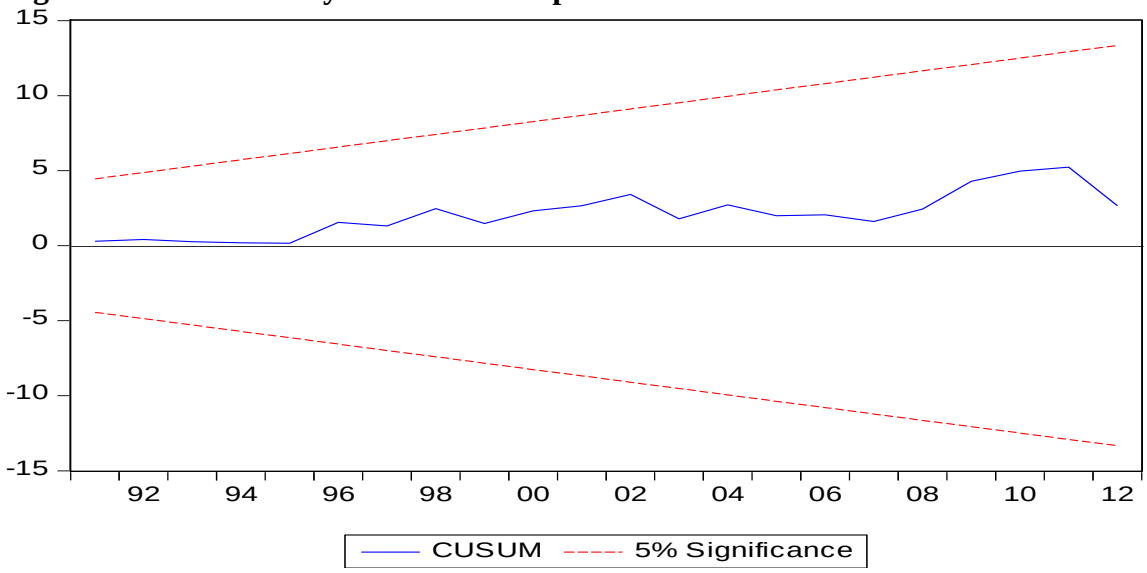
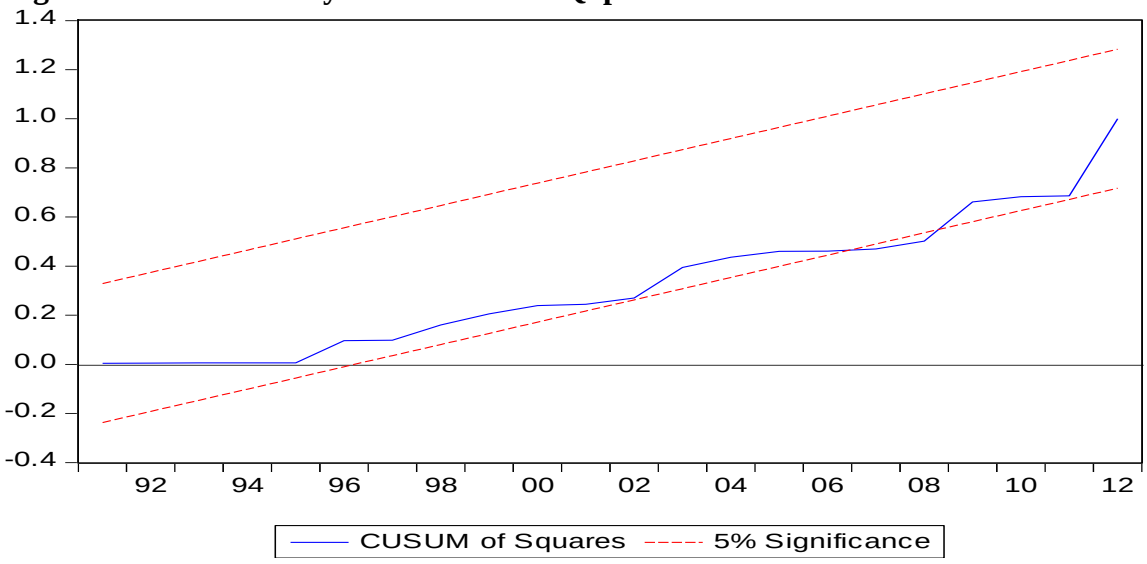


Figure 2: ECM stability test – CUSUMSQ plot -



Figures 1 and 2 plot the CUSUM and CUSUM of squares statistic for the error correction model .It can be seen from figure 1 that the plot of CSUSUM stays within the critical 5 % bounds that confirms the stability of coefficients, however CUSUMSQ statistics exceed the 5 critical bounds of parameter stability, thus indicates instability of the coefficients.

3.6. *Short run causality relationships*

Table 8 : VEC Granger Causality/Block Exogeneity Wald Tests

	D(FDI)	***D(OPEN)***	***D(GDP)***	***D(EXC)***
Excluded	***Chi-sq***	***Chi-sq***	***Chi-sq***	***Chi-sq***
D(OPEN)	**2.891019***	**0.496501**	**1.838494**	
D(GDP)	**0.042869 0.946913**			**1.668343**
D(INFL)	**0.336901 0.188124**	**0.536469**	**2.600695**	
D(RES)	**4.202324** .141430***	**0.378395**	**0.522876**	
D(FD)	**0.098509 0.038417**	**1.598613**	**0.237393**	
D(EXC)	**3.373721* 0.971327**	**0.068670**		
D(FDI)		**0.011480**	**0.174747**	

****significant at 0.1 level***
*****significant at 0.05 level***
******significant at 0.01 level***

The Granger Causality tests results suggest that Δ *OPEN* , Δ *EXC* and Δ *RES* Granger-Causes Δ *FDI* at 10 % , 10 % and 5 % level of significance respectively , Thus , it can be argued that past values of Δ *OPEN* , Δ *EXC* and Δ *RES* contribute to the prediction of the present value of Δ *FDI* even with past value of Δ *FDI* , we conclude

that the FDI inflow in Algeria is influenced by degree of openness and real exchange rate in the short run .

Table 9 : FDI variance decomposition of forecast errors

S.E.	FDI	OPEN	GDP	INFL	RES	FD	EXC
1	0.312858	100.0000	0.000000	0.000000	0.000000	0.000000	0.000000
2	0.521068	68.90945	4.806364	3.652646	8.721374	6.477695	0.096090	7.336379
3	0.602624	59.26136	11.85321	5.717798	10.83939	5.296233	1.450267	5.581747
4	0.649434	61.64035	11.06124	4.927037	9.880826	4.593801	2.991956	4.904786
5	0.699617	63.75499	10.37497	4.761283	8.971391	3.994909	3.251109	4.891347
6	0.741679	63.86528	10.37165	4.889551	8.641363	3.723000	3.753344	4.755813
7	0.776930	64.29643	9.917580	4.629254	8.170523	3.908265	4.521334	4.556615
8	0.811129	64.81615	9.314811	4.401906	7.658410	4.240660	5.081069	4.486988
9	0.843201	64.94043	8.816363	4.281500	7.241965	4.681786	5.582465	4.455490
10	0.873253	64.85419	8.339184	4.133392	6.860379	5.288523	6.124926	4.399410

The variance decomposition results shows that in the short run the 68.90 percent of the innovations in FDI are explained by its own past values, 7.33 percent due to real exchange rate, 8.72 percent is due to the inflation rate and about 6.47 percent is due to the foreign exchange reserves minus gold, while only 0.09 percent of innovation is caused by financial development variable

In the medium and long run about 64 percent of forecast error is due to the FDI innovations, 10 percent is caused by degree of openness and about 8 percent of innovations are due to the inflation rate, while only 3.90 percent and 4.55 percent of innovations are caused by foreign exchange reserves and real exchange rate respectively.

4. CONCLUSION

The aims of this paper are to analyses the *FDI* inflows in Algeria over the period (1980 – 2012), we used the cointegration and vector error correction model, and from this study we obtained the main following results:

- The FDI inflows behavior in Algeria is cointegrated with its fundamentals macroeconomics variables such as: inflation, real exchange rate, domestic investment

rate and degree of openness, meaning that there is a long run equilibrium relationship between these variables

- Foreign direct investment attractiveness policy based on coordination between the various macroeconomic policies, through the study we show that *FDI* is influenced by the behavior of macroeconomic variables of Algerian economy

- Foreign direct investment flows in Algeria continue to target the hydrocarbon sector and services, which prevents the diversification of the export structure

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Appendix

Fig 1: FDI observed and forecasted series

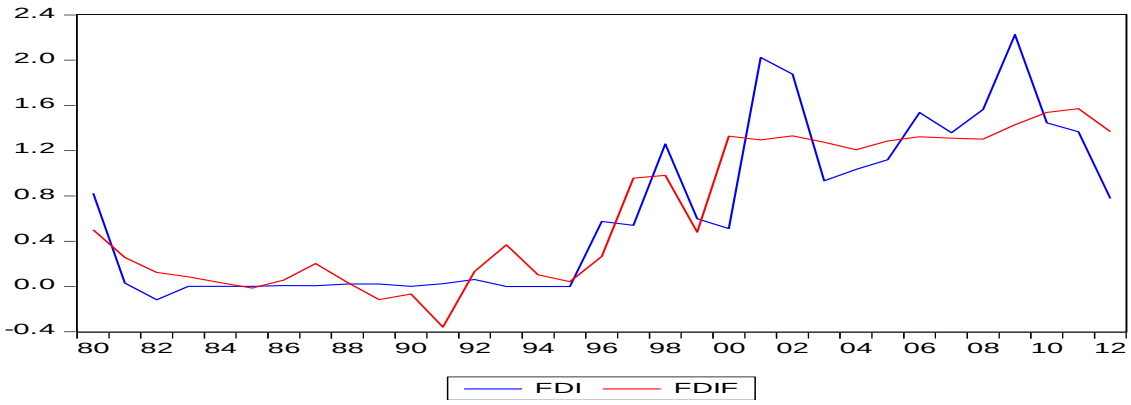

Fig 2 : VECM residuals normality test

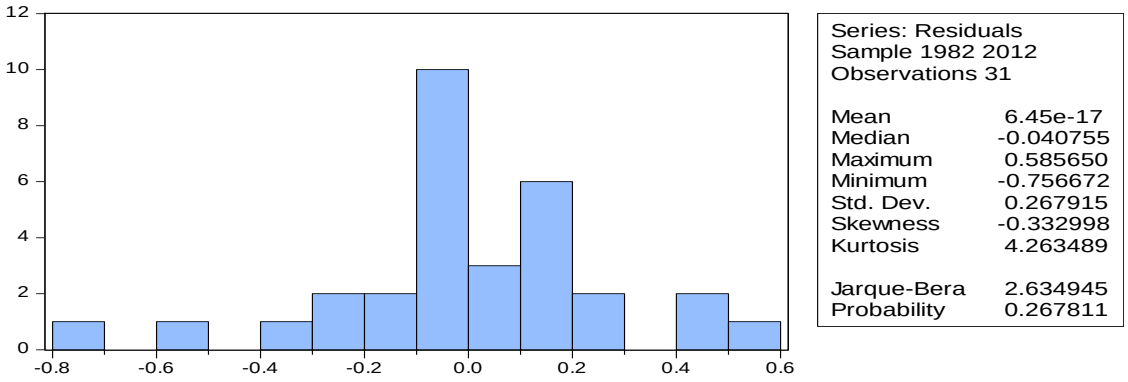

Figure 3 : VECM inverse Roots of AR Characteristics Polynomial

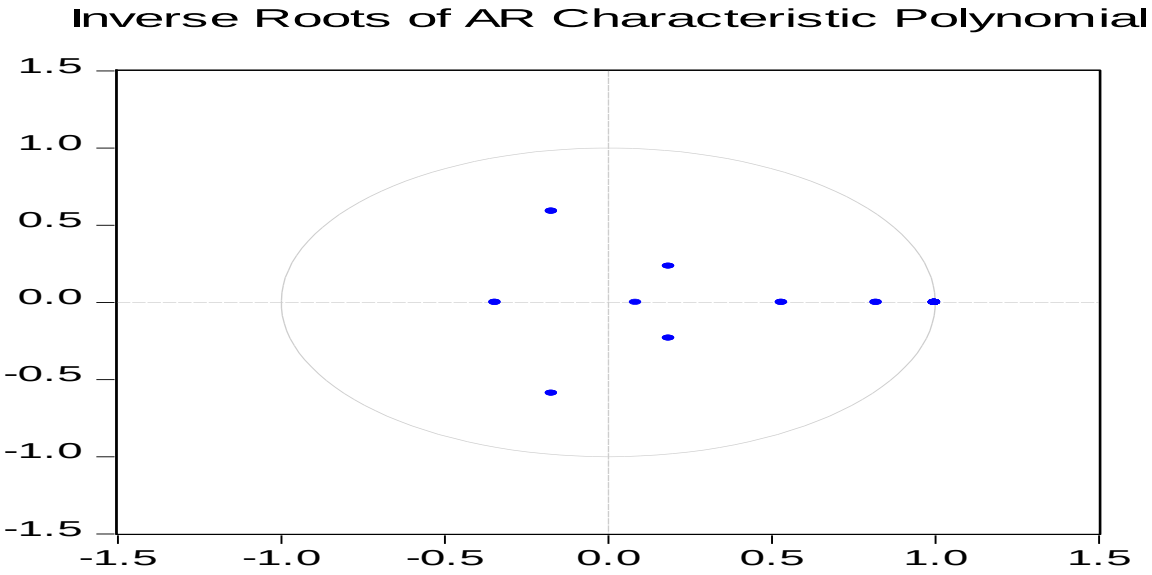

Fig 4 : FDI Variance Decomposition of forecast errors

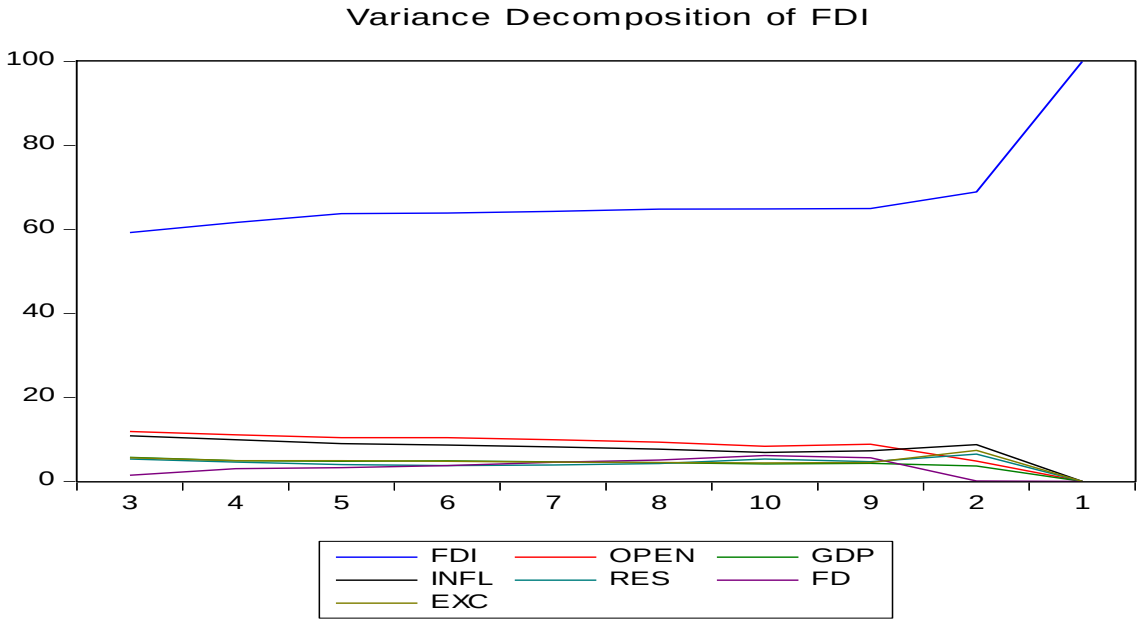

Table 1 : Correlation matrix

	FDI	FD	GDP	OPEN	EXC	INFL	RES
FDI	1						
FD	-0.5702	1					
GDP	0.23536	-0.0865	1				
OPEN	0.5262	-0.4119	0.4415	1		-	
EXC	0.5640	0.0977	0.2751	0.42718	1		
INFL	-0.5624	0.004	-0.40737	-0.34147	-0.74993	1	
RES	0.6375	-0.3519	0.0782	0.4327	0.4054	-0.3526	1

Figure 5 : Cointegrating relation

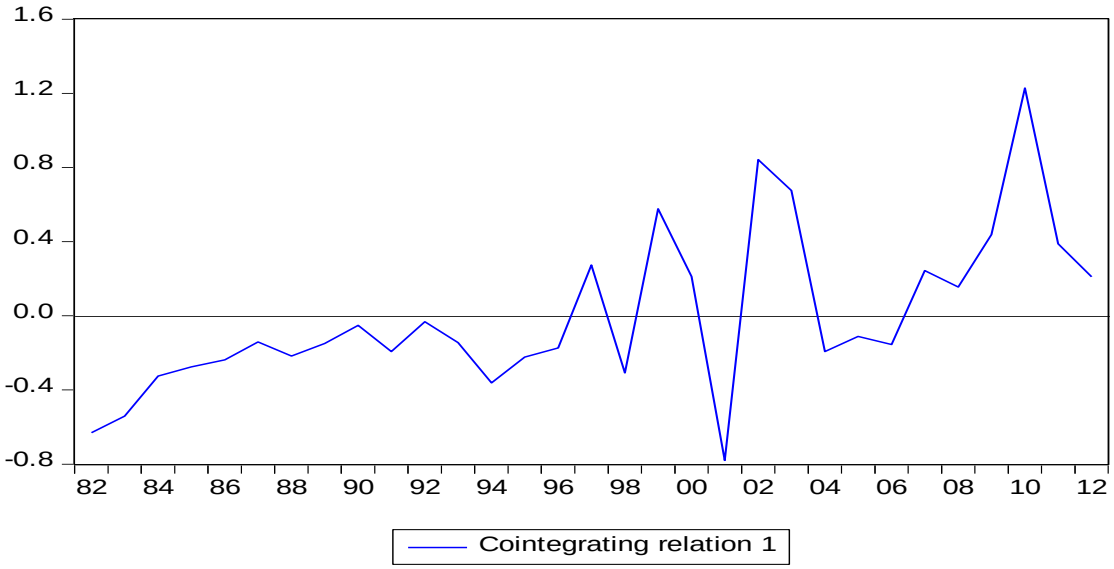

Fig 6: Algeria FDI as % of GDP (1980 – 2012)

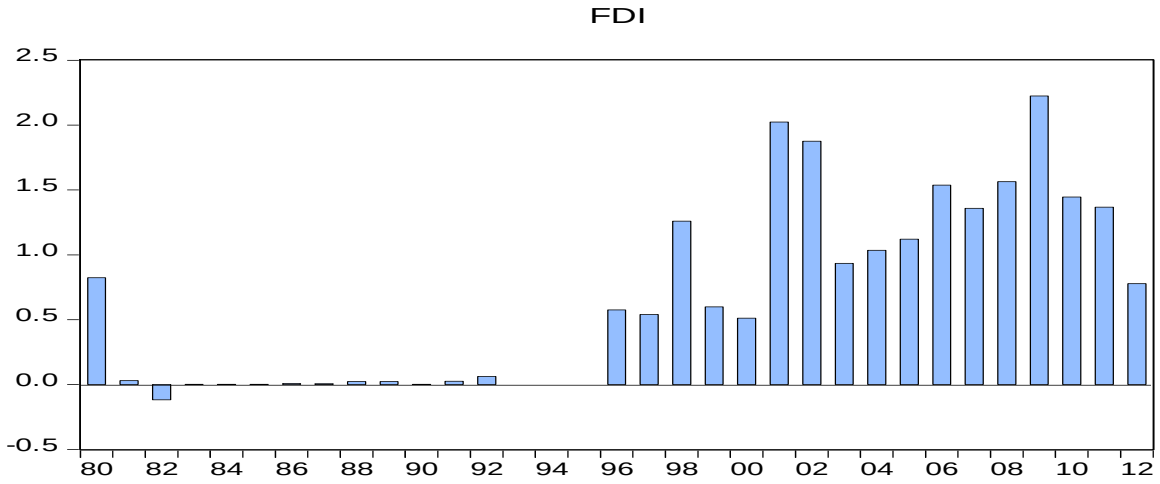

Table 2 : Variance Inflation Factors

	Coefficient	*Uncentered*	*Centered*

Variable	*Variance*	*VIF*	*VIF*
C	**0.395511**	**90.06014**	**NA**
OPEN	**9.48E-05**	**67.71615**	**2.010612**
GDP	**0.001318**	**3.691626**	**1.479622**
INFL	**0.000157**	**6.123817**	**2.647455**
RES	**1.91E-06**	**2.176890**	**1.544163**
FD	**1.05E-05**	**3.485558**	**1.543165**
EXC	**6.21E-05**	**55.17850**	**2.992604**

Table 3 : VEC Residual Serial Correlation LM Tests

Included observations: 31

Lags	LM-Stat	Prob
1	**43.17355**	**0.7073**
2	**48.56372**	**0.4907**
3	**54.48855**	**0.2737**

Probs from chi-square with 49 df.

Table 4 : Heteroskedasticity Tests

VEC Residual Heteroskedasticity Tests Joint test:

Chi-sq	df	Prob.
458.9199	**448**	**0.3504**

Figure 7 : IRF

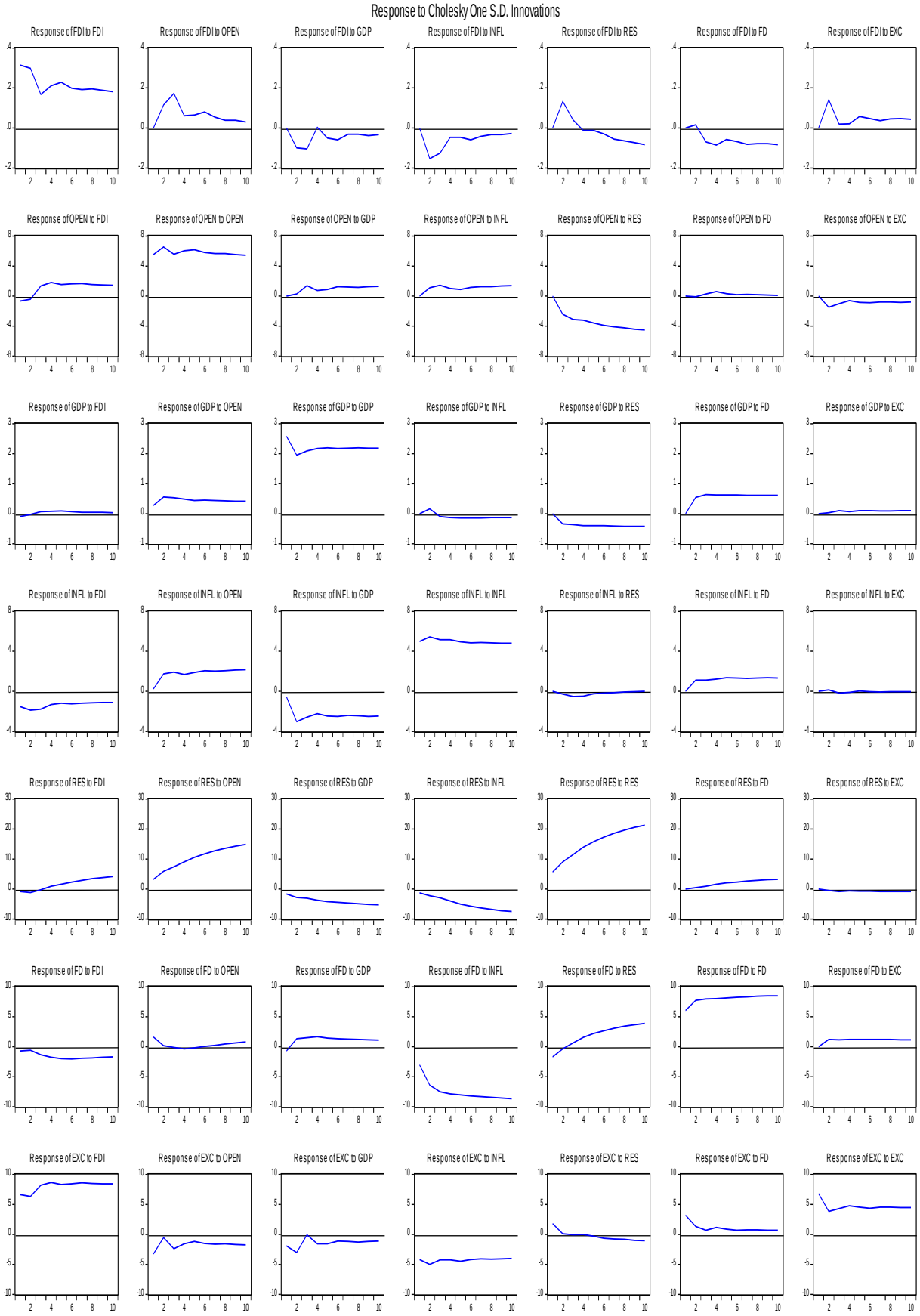
Response to Cholesky One S.D. Innovations
Response of FDI to FDI
Response of FDI to OPEN
Response of FDI to GDP
Response of FDI to INFL
Response of FDI to RES
Response of FDI to FD
Response of FDI to EXC
Response of OPEN to FDI
Response of OPEN to OPEN
Response of OPEN to GDP
Response of OPEN to INFL
Response of OPEN to RES
Response of OPEN to FD
Response of OPEN to EXC
Response of GDP to FDI
Response of GDP to OPEN
Response of GDP to GDP
Response of GDP to INFL
Response of GDP to RES
Response of GDP to FD
Response of GDP to EXC
Response of INFL to FDI
Response of INFL to OPEN
Response of INFL to GDP
Response of INFL to INFL
Response of INFL to RES
Response of INFL to FD
Response of INFL to EXC
Response of RES to FDI
Response of RES to OPEN
Response of RES to GDP
Response of RES to INFL
Response of RES to RES
Response of RES to FD
Response of RES to EXC
Response of FD to FDI
Response of FD to OPEN
Response of FD to GDP
Response of FD to INFL
Response of FD to RES
Response of FD to FD
Response of FD to EXC
Response of EXC to FDI
Response of EXC to OPEN
Response of EXC to GDP
Response of EXC to INFL
Response of EXC to RES
Response of EXC to FD
Response of EXC to EXC

Table 5 : VECTOR ERROR CORRECTION MODEL ESTIMATES

Error Correction:	D(FDI)	D(OPEN)	D(GDP)	D(INFL)	D(RES)	D(FD)	D(EXC)
CointEq1	-0.685208	8.258761	0.545435	0.841231	5.884681	-4.129796	7.552453
	(0.18590)	(3.30548)	(1.53916)	(3.11557)	(4.11208)	(4.28378)	(6.90494)
	[-3.68597]	[2.49851]	[0.35437]	[0.27001]	[1.43107]	[-0.96405]	[1.09377]
D(FDI(-1))	0.208999	-3.100199	0.139696	-0.672244	-3.371447	-0.519208	-2.445035
	(0.15747)	(2.79997)	(1.30378)	(2.63911)	(3.48322)	(3.62867)	(5.84898)
	[1.32725]	[-1.10722]	[0.10715]	[-0.25472]	[-0.96791]	[-0.14308]	[-0.41803]
D(OPEN(-1))	0.018831	0.344389	0.064614	0.282098	0.105252	-0.447745	0.557797
	(0.01108)	(0.19693)	(0.09170)	(0.18562)	(0.24499)	(0.25522)	(0.41138)
	[1.70030]	[1.74876]	[0.70463]	[1.51977]	[0.42962]	[-1.75436]	[1.35591]
D(GDP(-1))	-0.005198	-0.434407	-0.233755	-0.869837	-0.233914	1.136834	-1.204512
	(0.02511)	(0.44642)	(0.20787)	(0.42077)	(0.55535)	(0.57854)	(0.93254)
	[-0.20705]	[-0.97309]	[-1.12452]	[-2.06725]	[-0.42120]	[1.96499]	[-1.29164]
D(INFL(-1))	-0.006989	-0.092867	0.073024	0.203507	-0.074797	-0.304705	-0.721293
	(0.01204)	(0.21411)	(0.09970)	(0.20181)	(0.26636)	(0.27748)	(0.44727)
	[-0.58043]	[-0.43373]	[0.73244]	[1.00841]	[-0.28081]	[-1.09811]	[-1.61267]
D(RES(-1))	0.014226	-0.329745	-0.035344	-0.003219	0.645766	0.238549	-0.186385
	(0.00694)	(0.12339)	(0.05746)	(0.11630)	(0.15350)	(0.15991)	(0.25776)
	[2.04996]	[-2.67235]	[-0.61514]	[-0.02767]	[4.20689]	[1.49176]	[-0.72310]
D(FD(-1))	-0.002470	0.027424	0.082376	0.165905	0.053285	0.224597	-0.142409
	(0.00787)	(0.13992)	(0.06515)	(0.13188)	(0.17406)	(0.18133)	(0.29228)
	[-	[0.19600]	[1.26436]	[1.25800]	[0.30613]	[1.23861]	[-

	0.31386]						0.48723]
D(EXC(-1))	0.010381	-0.099042	0.012262	0.031086	0.008485	0.116122	-0.325170
	(0.00565)	(0.10049)	(0.04679)	(0.09472)	(0.12502)	(0.13024)	(0.20992)
	[1.83677]	[-0.98556]	[0.26205]	[0.32818]	[0.06787]	[0.89163]	[-1.54898]
C	-0.063314	1.806426	0.308539	0.135824	2.439268	-2.496461	0.808793
	(0.07101)	(1.26266)	(0.58794)	(1.19011)	(1.57077)	(1.63636)	(2.63762)
	[-0.89162]	[1.43065]	[0.52478]	[0.11413]	[1.55291]	[-1.52562]	[0.30664]
R-squared	0.651394	0.386313	0.134509	0.291981	0.608104	0.367028	0.264886
Adj. R-squared	0.524629	0.163154	-0.180215	0.034519	0.465597	0.136857	-0.002428

(.) Standart error , [.] t-Statistic