

**THE IMPACT OF TRADE OPENNESS ON ECONOMIC GROWTH
POLICY IN THE LONG RUN
STUDY THE CASE OF ALGERIA FOR THE PERIOD 1980- 2012**

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Abstract:

the goal of this study is to show the impact of trade openness policy on economic growth in Algeria in the long run, during the period 1980-2012, using the Cobb Douglas function and method of least squares in appreciation.

Through the results of the study, we concluded that trade openness has a positive effect on economic growth in Algeria in the long run.

Key words: trade openness, economic growth, Cobb Douglas function.

الملخص:

هدف هذه الدراسة هو تبيان أثر سياسة الانفتاح التجاري على النمو الاقتصادي في الجزائر على المدى البعيد، وذلك خلال الفترة 1980-2012 وذلك باستعمال دالة كوب دوغلاس وطريقة المربعات الصغرى في التقدير. من خلال نتائج الدراسة توصلنا إلى أن الانفتاح التجاري ذو أثر إيجابي على النمو الاقتصادي في الجزائر على المدى البعيد .

الكلمات المفتاحية: الانفتاح التجاري، النمو الاقتصادي، دالة الإنتاج كوب دوغلاس.

Introduction :

The new global trading system impact on countries has been and remains controversial among researchers and economists, some of whom believe that this system will benefit from developed and developing countries alike, and some of them believe that will lead to achieving the interests of developed countries at the expense of developing countries, In the current context of globalization, it is natural to wonder about the links between trade openness and economic growth. If we can establish clearly the existence of a positive and significant impact of openness on growth, it will encourage governments of developing countries seeking to improve their situation adopting trade liberalization policies. Furthermore, the impressive economic success of the East Asian countries reinforces the idea that such a development strategy is effective and desirable.

Algeria is like any other endangered developing countries in their own backyard because of the risks of globalization, and was one of the first countries to integrate into the global economy with this entails possibilities and means, and in the light of these facts necessitated the Algerian face of this strong and regular competition institutions, and in front of the speed and pace of trade liberalization business on a global scale, no longer poses openness as an alternative but as a given, and requires the adoption of a realistic strategy able to control it to make use of its advantages and avoid disadvantages. this paper analyses the relation between trade openness and economic growth in Algeria during the period 1980-2012 using the production function Cobb–Douglas. The remainder of this paper is organized as follows:Section1 Literature Review on Liberalization and Growth, section2 Methodology and data , Section3 empirical results and section4 concludes the paper.

1-Literature Review on Liberalization and Growth

The link between economic growth and liberty of international trade has been long debated. The classic trade theory promises efficiency gains to nations that adhere to the international division of labor, but not necessarily seeking positions laughing-growth rate. The advent of the endogenous growth theory was source models that promise indeed the most open economies growth (Romer, 1990)¹. In these models, trade stimulates a gen-Emress technological evolution of growth through better innovation performance and / or by facilitating the uptake of technologies developed abroad (by externalities of knowledge on the map), a particularly important consideration in the case of smaller economies.

In a number of studies have sought to demonstrate the correctness of this empirical link between openness and economic growth based on comparisons between countries: Sachs and Warner (1995)², Edwards (1998)³, Frankel and Romer (1999)⁴, Dollar and Kraay (2002)⁵, Wacziarg and Welch (2003)⁶, etc. We challenged for methodological reasons the claims of these studies - which have had influence - as to the existence of a general relationship between the gains of openness and the growth rate of earnings(Rodriguez and Rodrik(2001)⁷ Easterly, (2005)⁸, Rodriguez,(2007)⁹.

Similarly, Prabirjit (2007)¹⁰ reported that out of the fifty one less developed and developed countries studied between 1981 and 2002, eleven rich and highly trade-dependent countries had higher real growth associated with a higher trade share. While majority of the less developed countries including the East Asian countries experienced no positive long-term relationship between openness and growth. Meanwhile, Ulasan (2012)¹¹ conducted a cross-country analysis

on OECD and non OECD countries for the period 1960 to 2000. The results show that openness has no robust relationship with economic growth in the long-run. In contrast, Manni and Afzal (2012)¹² assessed the impact of trade on Bangladesh economy between the periods 1980 and 2010 and reported that trade increased economic growth. Similarly, in another study by Biwott, Moyi and Khainga (2013)¹³ on sixteen Sub-Saharan African countries, they reported that trade led to economic growth in the countries with good regulatory policies.

2-Methodology and Data

This paper based on the study of the impact of trade openness on economic growth in Algeria during the period 1980- 2012, where the data variables were obtained from The National Office of Statistics(ONS)¹⁴and world economic outlook(WEO)¹⁵.

The model is based on the general production function where the hypothesis of constant returns to scale is introduced. GDP (Y) is represented as a function of capital (K), labor (L) and technological change (T):

$$Y = f(K, L, T). \dots (1)$$

Based on the new growth theory that sees change technology as endogenous, we can replace the variable T by the variable of opening commercial country (open):

$$T = f(\text{open})$$

After logarithmic transformation of the production function (1), the equation we will estimate becomes:

$$\log(\text{gdp}_t) = \alpha + B_1 \log(k)_t + B_2 \log(l)_t + B_3 \log(\text{open})_t + \varepsilon_t$$

Where:

α : is the constant term

B_1 : The flexibility of gross fixed capital stock

B_2 : the flexibility of labor force

B_3 : The flexibility of trade openness

dependent variable:

GDP: represent Gross domestic product whith constant 2005 lcu

the independent variables:

K: represent gross Fixed capital stock whith constant 2005 lcu

L: represent labor force

OPEN: represent export/gdp

ε_t : is an error term

3- empirical results

The model shown above was estimated using the least squares method and the use of the *eviews9* program, and this table shows the results.

Table (1):result of estimated model

Dependent Variable: GDP

Method: Least Squares

Date: 12/13/15 Time: 12:05

Sample (adjusted): 1980 2012

Included observations: 33 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	16.55174	1.085001	15.25505	0.0000
K	0.314693	0.043771	7.189491	0.0000
L	0.606340	0.033516	18.09129	0.0000
OPEN	0.710025	0.072446	9.800748	0.0000
R-squared	0.985663	Mean dependent var		36.27269
Adjusted R-squared	0.984180	S.D. dependent var		0.259824
S.E. of regression	0.032680	Akaike info criterion		-3.890903
Sum squared resid	0.030971	Schwarz criterion		-3.709508
Log likelihood	68.19990	Hannan-Quinn criter.		-3.829869
F-statistic	664.5908	Durbin-Watson stat		0.911015
Prob(F-statistic)	0.000000			

Source : prepared by the researcher, depending on *eviews9* program.

From the result of the table (1) we can write the equation of the estimated model as this way:

$$\log(\text{gdp})_t = 16.55 + 0.31 \log(k)_t + 0.6 \log(l)_t + 0.71 \log(\text{open})_t$$

- analyze empirical results

It is seen from the table above, the following:

- All the parameters of the model are Statistically significant at level of 5% , The coefficient of determination (0,98) indicates that 98.5% Of the changes in GDP interpreted by the variables' model.

- The flexibility of gross fixed capital stock is (0.31) , This means that the increase of 1% in capital stock, Will increase real GDP by 0.31%. This can be explained by the application of Algeria the programs of economic growth through development plans for the period 2004-2013.

- the flexibility of labor force is (0.60) ,that means that the increase of 1% I labor force will increase real gdp by(0.60%) , This can be attributed to the programs established by the State to reduce unemployment, where it established programs to support youth employment, which inevitably will lead to increase gross domestic product in the long run.

- The flexibility of trade openness is (0.71), this means that the increase of 1% in trade openness will increase GDP by 0.71% This can be explained , that most of the national exports are hydrocarbons and raw materials, they play an important role in determining the output and income levels.

- The test of Durbin-Watson(0.91) indicates the existence of autocorrelation of errors

We have been introduced autoregression to improve durbin Watson then we were obtained the following table:

Table(2) : results estimated model after adding ar(1)

Dependent Variable: GDP
 Method: ARMA Maximum Likelihood (OPG - BHHH)
 Date: 12/13/15 Time: 12:07
 Sample: 1980 2012
 Included observations: 33
 Convergence achieved after 6 iterations
 Coefficient covariance computed using outer product of gradients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	16.22412	1.904687	8.517999	0.0000
K	0.334013	0.071369	4.680064	0.0001
L	0.583740	0.050088	11.65423	0.0000
OPEN	0.707179	0.103625	6.824373	0.0000
AR(1)	0.556746	0.217143	2.563958	0.0162
SIGMASQ	0.000669	0.000219	3.060173	0.0050
R-squared	0.989782	Mean dependent var		36.27269
Adjusted R-squared	0.987890	S.D. dependent var		0.259824
S.E. of regression	0.028592	Akaike info criterion		-4.097160
Sum squared resid	0.022073	Schwarz criterion		-3.825067
Log likelihood	73.60313	Hannan-Quinn criter.		-4.005609
F-statistic	523.0981	Durbin-Watson stat		1.539444
Prob(F-statistic)	0.000000			
Inverted AR Roots	.56			

Source : prepared by the researcher, depending on eviews9 program.

durbin Watson does improve(1.53) but the problem of autoregressions of errors doesn't resolve.

4-conclusion

this study has estimated and analyzed the impacts of trade openness on the economic growth in Algerian economy, in the period of 1980 to 2012, Using the production function Cobb–Douglas and the OLS method.

we found that the variables of our model (k , L , open) are significant and positive effect on gdp, We find that trade openness have a positive effects on growth economy in Algeria on long run.

Before concluding it is important to point out that our model suffers from the problem of autocorrelation of errors We suggest as Prospects Search study this topic by using the time series in order to resolve this problem.

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