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The Role of Foreign Direct Investment in Spurring Economic Growth in North African Countries

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Abstract-
The purpose of this paper is to test the effect of foreign direct investment (FDI) on economic growth in North African countries using the recent growth theory and econometrics technique; theoretically the most of the recent economic research consider the foreign direct investment one of the important factors of growth in many region,I examined the hypothesis on north African countries and the results showed that the FDI inflows impact on economic growth in North African countries statistically has a positive effecteven thoughFDI inflows to the region still doesn’t achieve the desired result.

Key words : Economic Growth; foreign Direct Investment (FDI); North African countries

دور الاستثمار الأجنبي المباشر فيتحفيز النمو الاقتصادي في دول شمال أفريقيا

ملخص-

تهدف هذه الورقة البحثية إلى اختبار تأثير الاستثمار الأجنبي المباشر على النمو الاقتصادي في دول شمال أفريقيا باستخدام نظريات النمو الاقتصادي وتقنيات الاقتصاد القياسي،من الناحية النظرية اغلب الأبحاث الاقتصادية المنشورة مؤخرا تشير إلى أن الاستثمار الأجنبي المباشر يعد أحد العوامل

الأساسية المحددة للنمو الاقتصادي في العديد من الاقتصاديات، في هذه الدراسة قمنا باختبار هذه فرضية على دول شمال أفريقيا، وأظهرت النتائج أن لتدفقات الاستثمار الأجنبي المباشر تأثير إيجابي على النمو الاقتصادي في دول شمال أفريقيا وان هذا التأثير كان ذو دلالة إحصائية على الرغم من أن تدفقات الاستثمار الأجنبي المباشر إلى المنطقة لا تزال لم تحقق النتيجة المرجوة.

الكلمات المفتاحية:نمو اقتصادي، استثمار أجنبي مباشر، دول شمال أفريقيا

1. Introduction:

During the last three decades north African countries adopted many economic reform policies to keep in pace with the rise of global growth, one of the policies was in form of supporting and welcoming foreign companies to attract foreign direct investment in order to spur economy growth, this policieshad started earlier in Tunisia and morocco and later in Algeria[1]

On a study on central and eastern Europe (CEE) and the middle east and north Africa (MENA)Darrat, A. F., et al. (2005) found that FDI has a significant effect only on EU accession contries and no effect or negative effect in non EU accession and MENA countries

Despite the many empirical studies on the impact of FDI on growth in developing countries,and sub-Saharan Africa there is a very limited articles on FDI effect on growth in Middle EastandNorth African region,

The question is does FDI inflows causes a change in economy growth in northern African countries? To answer this question I use a panel data analysis from 1980 to 2011 on the six north African countries Algeria, Egypt, Libya, Morocco, Sudan, and Tunisia,

The United Nation Conference on Trade and Development define foreign direct investment (FDI) as “an investment involving a long-term relationship and reflecting a lasting interest in and control by a resident entity in one

[1] in form of many agreements with the International monetary fund IMF which wasn’t effective see www.animaweb.org

economy (foreign direct investor or parent enterprise) of an enterprise resident in a different economy (FDI enterprise or affiliate enterprise or foreign affiliate). Such investment involves both the initial transaction between the two entities and all subsequent transactions between them and among foreign affiliates"[2] (UNCTAD)

2. Literature Review:

Literary many studies acknowledge the advantages of FDI on economic growth, beside other few studies showed a negative effect of FDI on economic growth

Table 1: Empirical literatures

Author (s)	Year	Findings
De Mello, L. R	1999	Time series and panel data study on period from 1970 to 1990, showed that FDI effect on growth depends on the relation between foreign and domestic investment
Carkovic, M	2002	Dynamic panel data study on 72 countries during a period from 1960 to 1995 the results viewed the positive impact on growth
Lyroudi, K.	2004	empirical Bayesian analysis on the US and the western European countries the results showed that FDI does not exhibit any significant relationship with economic growth for the transition countries
Andreas, J	2006	The study covered 90 countries from 1980 to 2002, the result shows a positive effect of FDI on growth in developing countries while the effect was negative on developed countries
Anita H and Ferda H	2006	tested the impact of FDI on growth in 140 country across the world they found a positive and significant results
Ilan Noy	2007	examine the role of inward FDI on Indonesia economic growth from 1997 to 2007 and the results showed a negative effect,

[2]Www. unctad.org

Aviral Tiwari,et al.	2011	u sing a panel model Study during the period 1986-2008 on 23 Asian countries found that FDI and exports enhance economic growth
Sukar, A., et al.	2011	Beside trade openness macroeconomic policies, FDI has a significant effect on economic growth, the Study from 1975-1999 in sub-Saharan African countries
Najia Saqib, et al.	2013	maintain that Pakistan's economic performance is negatively affected by foreign investment while its domestic investment has benefitted its economy, Moreover, the nation's debt, trade and inflation have found to have negative impact on its GDP as well.

3. Overview of Economic Growth and Foreign Direct Investment in North African Countries:

In the last three decades North African countries economic growth was not too deferent from the global as the chart bellow shows, except after the ARAB SPRING when the economic growth dropped

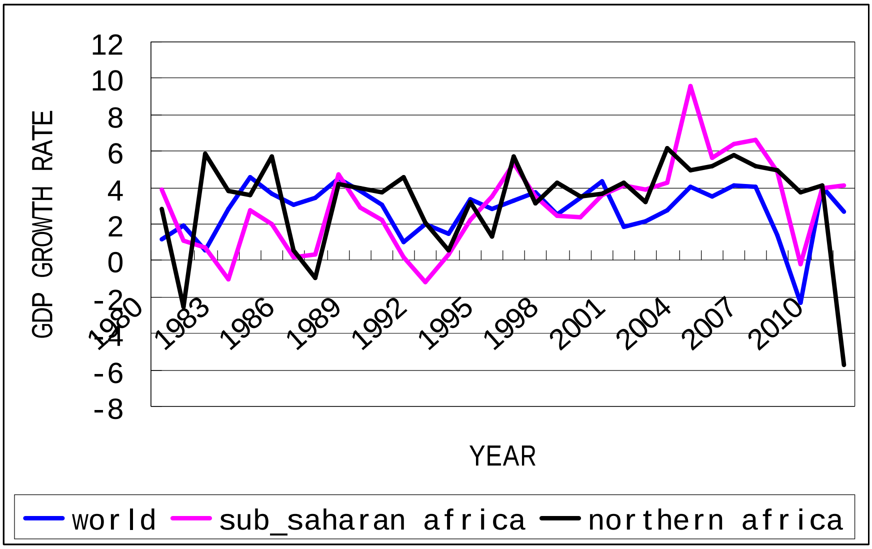

Figure 1: GDP growth Rates, Source: UNCTAD Database 2015

Figure 1 shows the GDP growth Rates of the world, Sub-Saharan and North

Africa region, from 1980 to 2010 economic growth in north African countries was almost in same trend with world economic growth, but in 2011 declined sharply and this was the remnants of instability and revolutions in Middle-East and North Africa, or what is known as the Arab Spring (Tunisia, Egypt and Libya).

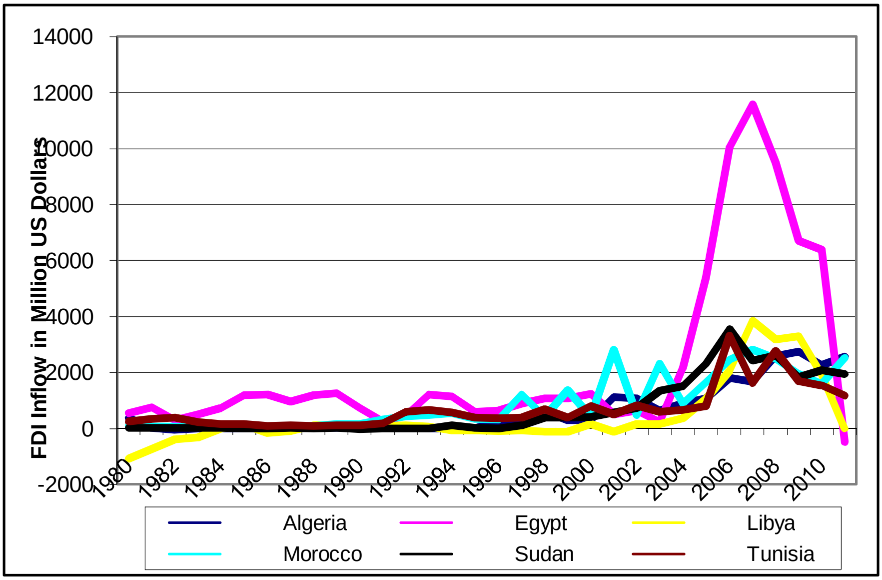

Figure 2: FDI Inflows to North African countries,

Source: UNCTAD Database 2015

Figure 2 shows the FDI inflows to North African countries from 1980 to 2011, During the eighties and nineties of the last century North African countries share of FDI was limited due to the economic policies pursued by the most of this countries from 2000 the FDI inflow grows obviously, and the share of Egypt was very significant due to the strategic location and large economy Egypt represent in North Africa and the Middle East till 2008 where it dropped after the revolution.

4. The model identification:

The Panel data, or cross data, have two dimensions(Temporal: Longitudinal, Individual: cross) it reports the values of the variables collected for a set or panel of individuals over a series of periods.

The formal notation uses two indices: x_{it} notes the observation of the**x** variable for individual **i** at time **t**.

If we fix the individual observed time series is obtained, while if the review period is fixed, a cross section is obtained, or instantaneous, for all individuals.

It is possible to envisage cross-data of more than two dimensions,

Many econometric models, especially in the field of international studies, may face cross data, the particular nature of these calls to consider specifications and appropriate estimation methods.

In this paper I apply the fixed effect model and the random effect model

5. **Data and Empirical estimation**:

The data for the six countries complied from the World Bank and united nation conference on trade and development (UNCTAD) database,

I used fixed effect model to investigate the relationship between FDI and economic growth on panel data of six countries during a period from 1980 to 2011

The estimation model based on the production function developed by Jawaid, S. T et al, 2012, Specified as follows:

$$GDPGR_{it} = \beta_0 + \beta_1 * FDI_{it} + \beta_2 * TR_{it} + \beta_3 * INF_{it} - \beta_4 * OP_{it} + \mu_t$$

Where:

GDPGR: Real Gross domestic product Growth Rate

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.291329	1.227312	1.866949	0.0635
FDI	0.451159	0.197776	2.281169	0.0237
TR	0.013185	0.021791	0.605057	0.5459
INF	0.003926	0.019204	0.204425	0.8383
Fixed Effects (Cross)				
ALGERIA--C	-0.62264			
EGYPT--C	1.269049			
LIBYA--C	-2.15202			
MOROCCO--C	0.022282			
SUDAN--C	1.968963			
TUNISIA--C	-0.44928			
	Effects Specification			
Cross-section fixed				
Adjusted R-squared	0. 8186			
F-statistic	4.436918			
Prob(F-statistic)	0.000064			

FDI: Foreign direct investment inward flowas a Percentage of Gross Domestic Product

TR: trade openness export plus import on Gross Domestic Product

INF: Inflation

μ: Random errors

i = i-th (cross-sectional unit)

t = t-th (time period).

Literary I expect a positive effect of Foreign direct investment and trade openness, and a negative effect of Inflation

6. Estimations Results:

I run a fixed and random effect tests

The tables below shows the fixed and random effect model result

Table 2: fixed effect

Source: author estimation

Table 3: Random effect

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.185155	0.990054	3.217153	0.0015
FDI?	0.786712	0.157235	5.003421	0
TR?	0.016	0.014859	1.07703	0.2829
INF?	0.023275	0.016428	1.416748	0.1582
	Effects Specification			
Cross-section random			0	0
Idiosyncratic random			4.171408	1
	Weighted Statistics			
Adjusted R-squared	0.79087			
F-statistic	8.632371			
Prob(F-statistic)	0.000022			

Source: author estimation

The empirical result shows that in the two tests the entire variable except inflation has the expected sign,

- Relationship betweenFDI and the dependant variable GDPGR; in the two model I observe that the estimated coefficient of FDI is positive which mean FDI is supporting the economy growth In all the ix countries
- Trade openness has a positive coefficient as well exhibited a positive effect

on economic growth as well,

- Effect of inflation expected to be negative but the inflation coefficient is positive too which determine that inflationcan be a usefultool for the policy makers to spur economic growth

7. **Summary and conclusion**:

In conclusion, the foreign direct investment inflows spurs economic growth, in this study I had applied the fixed and Random effect test which is suitable test for as this kind of study across 6 countries during a period of 31 years,

The north African countries during the last three decades experienced a growth and decline cycle as in many developing economies in addition the current circumstance this countries is facing (The Arab Spring) harm the economy growth andaffect negatively theforeign directflow to the region at least at the short run,

Beside the factors I have tested still left some determent of economic growth which holds a large effective part of economic growth in North Africa as political stability, infrastructure, Education, and oil price which play a very significant role on both oil importer and exporter countries economic growth.

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