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The Relationship between Unemployment and Economic Growth Rate in Arab Country

Shatha Abdul-Khaliq*
Assistant Professor,Al Zaytoonah University of Jordan. Amman.Jordan
E-mail: yshatha@gmail.com

Thikraiat Soufan
Assistant Professor,Al Zaytoonah University of Jordan. Amman.Jordan
E-mail: yshatha@gmail.com

Ruba Abu Shihab
Assistant Professor ,AlBlqa Applied University, Jordan

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Abstract
The main purpose of this paper is to examine the relationship between unemployment and GDP growth in Arab countries. We consider 9 Arab Countries between 1994 and 2010. The model adopted for testing the relationship is the Pooled EGLS (Cross-section SUR). It has been found that economic growth has negative and significant effect upon the unemployment rate it means that 1% increase in economic Growth will decrease the unemployment rate by 0.16%..
Keywords: Economic growth, Unemployment, GDP, Okun's law, panel, Arab countries.

1.Introduction:

Potential output is seen as the aggregate output produced in an economy, when all factors especially human resources are gainfully employed or fully utilized. It is the maximum level of durably sustainable production, without tension in the economy, and more precisely without acceleration of inflation. Conversely, real output is the national output produced when some units of factors still remained virtually unemployed. Thus, the gap between the potential GDP and real GDP spreads out the variations in unemployment which are in turn inversely related to changes in output. This relationship was first recognized and empirically estimated by Okun (1962), which is now commonly called Okun's law.

okun's law is an empirical relationship between changes in aggregate output (relative to its potential trend) and changes in the unemployment rate (relative to its natural rate). In other words, this law is intended to tell us how much of a country's gross domestic product (GDP) may be lost when the unemployment rate is above its natural rate.

the study is structured into 3 sections: section (1) deals with the literature review; section (2) discusses methodology and data; while analysis of results, conclusion and recommendations are presented in section (3).

1.1Hypothesis:

The hypotheses is:

Ho: There is no significant relationship between Unemployment and economic growth.

1.2Literature Review:

A lot of studies exist on the causality between Unemployment and economic growth. We summarize some studies that addressed this issue as follows:

Bankole and Fatai (2013) estimated the Okun's coefficient, and checked the validity of Okun's law in Nigeria, using the time series annual data during the period 1980-2008. Engle granger co-integration test and Fully Modified OLS were employed. The empirical evidences showed that there is positive coefficient in the Regression, implying that Okun's law interpretation is not applicable to Nigeria. It was recommended that government and policy makers should employ economic policies that are more oriented to structural changes and reform in labor market .

Ball, Leigh, and Loungani (2012) asked how well Okun's Law fits short-run unemployment movements in the United States since 1948 and in twenty advanced economies since 1980. And found that Okun's Law is a strong and stable relationship in most countries, one that did not change substantially during the Great Recession. Accounts of breakdowns in the Law, such as the emergence of "jobless recoveries," are flawed. Also found that the coefficient in the relationship—the effect of a one percent change in output on the unemployment rate—varies substantially across countries. This variation is partly explained by idiosyncratic features of national labor markets, but it is not related to differences in employment protection legislation.

Owyang and Sekhposyan (2012), examined whether Okun's law contributed to the the Great Recession of U.S.

they considered various specifications of Okun's law to assess the degree of time variation in the unemployment and output fluctuations over the business cycle. And payed particular attention to the three most recent U.S. recessions and the Great Recession. The paper found a great degree of instability in the historical performance of Okun's law. The breakdowns in Okun's law seem to be highly correlated with the business cycle: The detected break dates of the largest changes inthe coefficients appear to be around recessions. The most robust finding of this study is that recessions contribute to the increase in the unemployment rate on average. The correlation between unemployment and output fluctuations changes significantly during the Great Recession and the three most recent recessions. The statistical significance of the slope changes depends on the specification at hand. Nevertheless, it appears that periods of high unemployment are correlated with increased sensitivity of the unemployment rate to output growth or gap fluctuations, though these shifts might not always result in significant changes .

Irfan Lal et al. (2010), estimated the Okun's coefficient, and checked the validity of Okun's law in some Asian countries, for this purpose they used the time series annual data during the period 1980-2006. Engle Granger (1987) co integration technique is employed to find out long run association between variables and error correction mechanism (ECM) is used for short run dynamic. After getting empirical evidences it can be said that Okun's law interpretation may not be applicable and also the principle of NAIRU does not hold its validity in some Asian developing countries.

Pierdzioch et al. (2009) used data covering the period 1989-2007 for G7 countries test relevance of Okun_s law to professional economist_s forecasts of output growth and unemployment. Their results confirmed the consistency between Okun_s law and professional conomists' forecasts of changes in unemployment rate and the real output growth rate. They also found a direct relationship between magnitude of unemployment and the size of the output gap. In a nut-shell, literature reveals that Okun's law has been revisited in several countries where the disparity between real output and unemployment is alarming. Therefore, it is imperative to test for the empirical validity of this law in Nigeria where this disparity is even more alarming.

Noor, Nor and Judhiana (2007) examined whether there exist an Okun – type relationship between output and unemployment in the Malaysian economy. The empirical results show that there was an inverse relationship between output and unemployment.

Naimy (2005) applied Okun-type relationship to the Lebanese equation in order to estimate the Lebanese potential output. An empirical study covering 400 households is carried out to investigate the employment status using the BLS criterion in determining the most useful measures of the labor market .

The main finding was that the impact of unemployment in Lebanon seems to be extremely harmful: the economy is $32 billion below its potential output. Unemployment in Lebanon is continuously growing as a result of the present financial and economic27 ―deadlock ‖ situation. It is the human resources of a nation, not its physical capital or its natural resources, that ultimately determine the character and pace of its economic growth and social development. Capital and natural resources are passive28 factors of production; human beings are the active agents who accumulate capital, exploit natural resources, build social, economic and political organizations, and carry forward national development. Clearly, a country which is unable to develop the skills and knowledge of its people and to utilize them effectively in the national economy, will be unable to develop anything else .

Barreto and Howland, (1993), corrected a fundamental error in the literature examining the Okun's Law relationship between the unemployment rate and the rate of growth of output. Since Okun's original work, biased estimates of the Okun Coefficient on Unemployment, output gaps, and potential GNP have been reported by authors who mistakenly assume that unbiased coefficient estimates of the reverse regression are reciprocals of their direct regression analogues .

Okun's (1962) original work states that a one percent point reduction in unemployment rate would increase output by approximately 3 percent. Therefore to avoid the waste of unemployment, the economy must continually expand

2.METHODOLOGY

*2.*1Data *set*

Data for this study are panel data on all 9 Arab countries(ALGERIA, EGYPT, JORDAN, LEBANON, MOROCOO, PALESTINE, SUDAN, SYRIA, TUNISIA) for the 16 year period from 1994-2010. from The Statistical, Economic and Social Research and Training Centre for Islamic Countries (SESRIC).

The figure 1 show the unemployment rate in the sample. LEBANON has the lowest unemployment rate and PALESTINE, SUDAN and TUNISIA ,JORDAN have generally the highest unemployment rate among these countries. In other countries, some increases have been seen in various periods.

2.2Stationary Test:

On the contrary on time series tests, the data type of the longitudinal use following tests ADF (1999) Levin, Lin

& Chu (2002), Pesaran & Shin (2003). all these tests assume presence unit Root in the data, in the sense that it is not stable, a hypothesis based, as opposed to the alternative hypothesis that there is no root unit (unit root), which means that the data is stable (stationary) .

We apply several panel unit root tests for unemployment rate ,GDP and population the individual and the pooled panel unit root tests results are represented in Table (1). Pooled unit root test results show that the unit root null hypothesis for panel data can be rejected in level for all series.

2.3Empirical Results

we estimate the long run model using Pooled EGLS (Cross-section SUR) estimation methods. The results are displayed in Table 2

The studied panel regression equation is:

UNi= ß0+ ß1 GDPRi+ ß2 POPi

Where UNi are the unemployment rate of country i

GDPRi is real economic growth rate of country i.

POPj is Growth Rate of Population of country i

The results are as follows:

UN= 11.4-0.17GDPRi+ 0.37 POPi

The results are significant from an econometric point of view (the risk associated to the null hypothesis, according to which the estimators are zero, is below 5%), and The explanatory power shows that over 92 percent of the total changes in unemployment rate are explained by the included exogenous variables. The F-statistics is statistically significant at the 5 percent level

The coefficient of economic growth is negative and significant. it means that 1% increase in economic Growth will decrease the unemployment rate by 0.16%..

The coefficient of Growth Rate of Population is significant at the 5% level and the sign is positive indicating that 1% increase in Growth Rate of Population will increase the unemployment rate by 0.37%.

Conclusion

This study is an attempt to investigate the relationship between unemployment and GDP growth in Arab countries for the period of 1994 to 2010 using unit root testes methodology and Pooled EGLS (Cross-section SUR). We find that the economic growth has negative and significant effect upon the unemployment rate it means that 1% increase in economic Growth will decrease the unemployment rate by 0.16%..

furthermore, The coefficient of Growth Rate of Population is significant at the 5% level and the sign is positive indicating that 1% increase in Growth Rate of Population will increase the unemployment rate by 0.37%.

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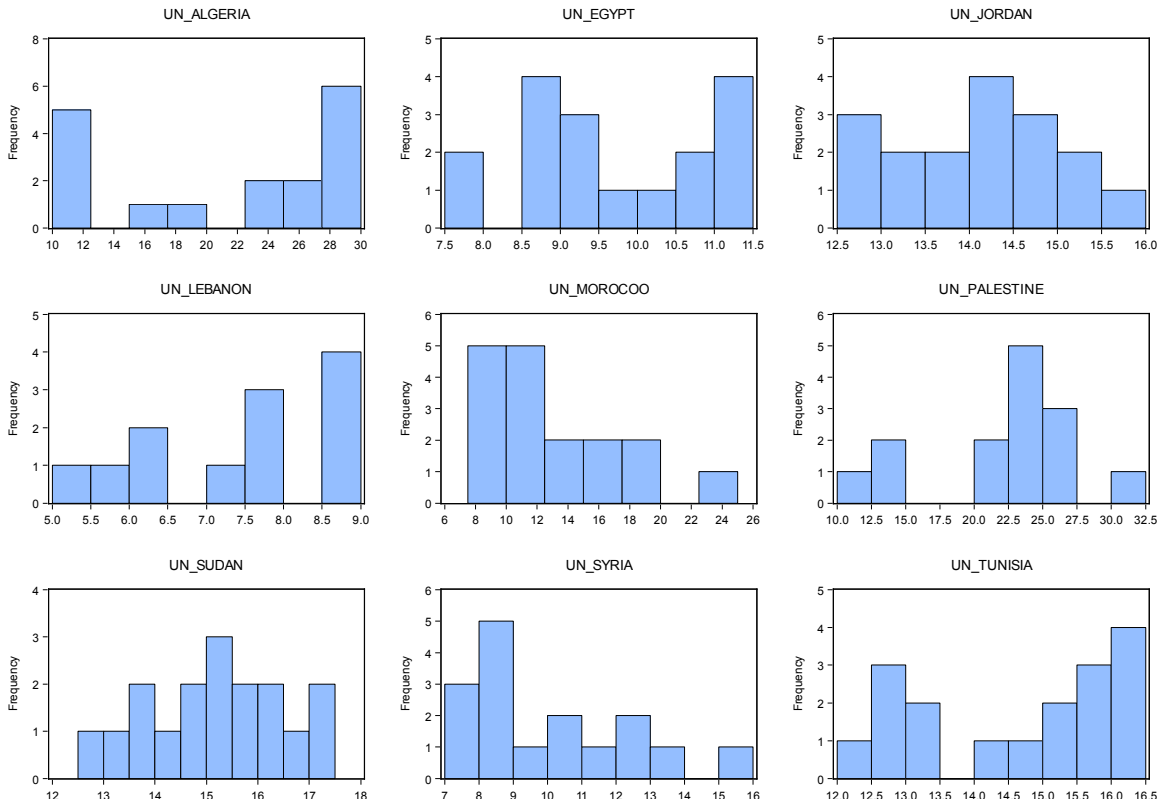
Table 1 Panel Unit Root Test Results

Variable	GDP Growth		Growth Rate of Population		Unemployment	
Method	Statistic	Prob.	Statistic.	Prob.	Statistic.	Prob.
Levin, Lin & Chu t	-10.2	0.0000	-6.25	0.0000	-2.01	0.0220
Im, Pesaran and Shin W-stat	-8.80	0.0000	-7.32	0.0000	-1.91	0.0284
ADF - Fisher Chi-square	78.46	0.0000	71.85	0.0000	32.13	0.0212
PP - Fisher Chi-square	77.73	0.0000	37.37	0.0047	22.55	0.2087

Table(2): The Regression Results
Method: Pooled EGLS (Cross-section SUR)
Sample (adjusted): 1997 2010

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDPR?	-0.167880	0.046231	-3.631297	0.0006
POP?	0.376513	0.191835	1.962697	0.0549
Constant	11.37778	0.441457	25.77325	0.0000
Fixed Effects (Cross)				
_JORDAN--C	2.623645			
_MOROCOO--C	0.113504			
_LEBANON--C	-4.296748			
_EGYPT--C	-1.390025			
_TUNISIA--C	2.949622			
R-squared	0.924956	Mean dependent var		9.465642
AdjustedR-squared	0.916460	S.D. dependent var		4.361263
S.E. of regression	1.058908	Sum squared resid		59.42821
Sum squared resid	108.8753	Durbin-Watson stat		1.435811
F-statistic	108.8753			
Prob(F-statistic)	0.000000			



figure(1): unemployment rate in Arab countries

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