



Trade Openness, Economic Growth and Unemployment Reduction in Arab Region

Taleb Awad-Warrad*

Faculty of Business, Middle East University, Jordan. *Email: dean-business@meu.edu.jo

ABSTRACT

The main objective of this research paper is to empirically evaluate the theoretical relationship between unemployment and some key macroeconomic determinants including among others trade openness policy and real economic growth for Arab countries. The main question of the study is whether achieving economic growth and liberalizing international trade contribute to creating more jobs and hence resulting in less unemployment. The study utilizes a cross time series sample covering the period 1990-2015 for seven selected Arab countries. The study estimated the unemployment model using panel WLS. The study provides evidence of large and significant impact of trade openness on unemployment rates in the selected Arab countries when taken as one pooled group. On the other hand, as expected real economic growth affected favorably unemployment rates in this group of countries.

Keywords: Trade Openness, Real Growth, Unemployment, Arab Countries

JEL Classifications: E24, F1, F43

1. INTRODUCTION

The paper investigates the impact of trade openness and growth on unemployment in selected Arab countries. The subject of this study is becoming more important in light of the spread of unemployment problem especially among young and educated workers in many Arab countries.

This research will tackle one of the main issues that is deeply concern policy makers in the region which is whether achieving economic growth and liberalizing international trade contribute to creating more jobs and hence resulting in less unemployment. Jordan and many other Arab countries have succeeded to achieve high rate of real economic growth during the last three decades, but still not clear how this affected important socio-economic variables such as income distribution, poverty and unemployment in these countries. Policy makers will benefit from this research in applying their unemployment/poverty alleviation and trade policies to better control unemployment gap in the region. In particular, the study will attempt to evaluate empirically the impact of trade openness and real economic growth on unemployment rates in the selected Arab countries.

The study proceeds as follows: Literature review will be presented in the following section, followed by initial table based analysis of the development of some key variables, the theoretical background and the econometric model will be presented next followed by econometric analysis. Finally, conclusions and recommendations will be presented in the last section.

2. LITERATURE REVIEW

Nwaka et al. (2015) investigated the empirical relationship between trade policy and unemployment in Nigeria using vector error correction methodology. Their findings revealed that in the long run, real output and income per capita lead to a decline in unemployment, but trade openness policy is associated with an increase in unemployment.

Gozgor (2014) examined the impact of four different measures of trade openness and globalisation on the unemployment rate in the G7 countries: Canada, France, Germany, Italy, Japan, the United Kingdom (UK), and the United States (US). The results of estimation found evidences that, along with macroeconomic indicators and market size, all the measures of trade openness and

globalization are significantly and negatively associated with the unemployment rate.

Halit (2013) examined how trade liberalization affects the growth rate of sectoral employment in developed and developing countries. The estimation results implied that trade openness in the form of higher trade volumes has not been successful in generating jobs in developing countries. In addition, they found that higher trade volumes have adverse effect on industrial employment in developed countries. Moreover, while they have positive effect on employment in industry and services in developing countries, trade barriers have adverse effect on employment growth in services for developed countries.

Hasana et al. (2012) used state and industry-level unemployment and trade protection data from India, they found no evidence of any unemployment increasing effect of trade reforms. At the state-level analysis, they found that urban unemployment declines with trade liberalization in states with flexible labor markets and larger employment shares in net exporter industries. Moreover, their results indicate that workers in industries experiencing greater reductions in trade protection were less likely to become unemployed, especially in net export industries.

This paper focuses on the impact of trade openness and real economic growth on macroeconomic employment-unemployment levels in the ARAB region. The study utilizes modern econometric techniques using an updated cross-sectional data. The importance of this subject is becoming more important in light of the current policy debate among economists on the effectiveness of trade liberalization as engine to growth and unemployment reduction.

3. DEVELOPMENT OF GROWTH, UNEMPLOYMENT, AND TRADE OPENNESS

Figure 1 is based on Table 1 in Appendix Table 1A, it compares the development of trade openness, unemployment and real economic growth for the selected Arab countries included in the sample (Algeria, Bahrain, Egypt, Jordan, Oman, Saudi Arabia, and Tunisia) for the period 1990-2015. Trade openness measured as percentage of total trade to gross domestic products (GDP), increased for all Arab countries in the sample up to year 2011, and started to drop since after. According to the openness indicator Bahrain was the most open economy followed by Oman during the study period, while Egypt was the least open economy followed by Algeria. Real economic growth was volatile during the period for all Arab countries included in the sample. The highest achieved growth in Algeria was 6% in 2005, while the lowest was negative 2% in 1993. In Saudi Arabia the high growth was recorded in 1991 at 9%, while the lowest was negative 1% in 1999. The highest rate of growth recorded in Jordan was 19% in 1992, while the lowest was recorded in 2015 at 2%. In Tunisia the highest rate of real growth was achieved in 1992 at 8%, while the lowest was negative 2% in 2011. Paradoxically, the highest rate of unemployment was recorded in Jordan at 19.7% in 1992, the same year that witnessed the

highest rate of growth. During the 90s and early 2000s the unemployment was soaring in Algeria (20-30%) as a result of domestic violence. Bahrain followed by Saudi Arabia recorded the lowest unemployment rates which were not much above the normal rates during the whole study period. Oman also recorded lower unemployment rates compared to Jordan, Tunisia and Egypt, during most years of the study sample.

4. THEORETICAL UNEMPLOYMENT MODEL

Economic theory suggests the following determinants to overall unemployment rate:

- Unemployment = f (trade openness, real growth rate, fixed capital formation, population growth, others).
- Real economic growth: Real economic growth is expected to promote employment and hence to reduce overall unemployment rate.

Trade flows: There are two main international trade flows, exports and imports of goods and services. Exports expansion comes through domestic production expansion of goods and services in which a country enjoys comparative advantages which results in less unemployment rates. Imports expansion come at the expense of domestic production and hence may contribute to higher unemployment rates.

Trade openness: There are several measures to trade openness including ratio of exports to GDP, ratio of imports to GDP, and ratio of the sum of exports and imports to GDP. According to major international trade theories and under certain assumptions, more trade liberalization is expected increase economic welfare and reduce unemployment rate.

Fixed capital formation: Investment through accumulation of capital goods contribute over time to the usage of more capital-intensive methods of production. This may contribute to higher unemployment rates.

Population growth: Population growth enlarges the size of labor force. This may increase or decrease unemployment rates depending on the absorption capacity of the labor market.

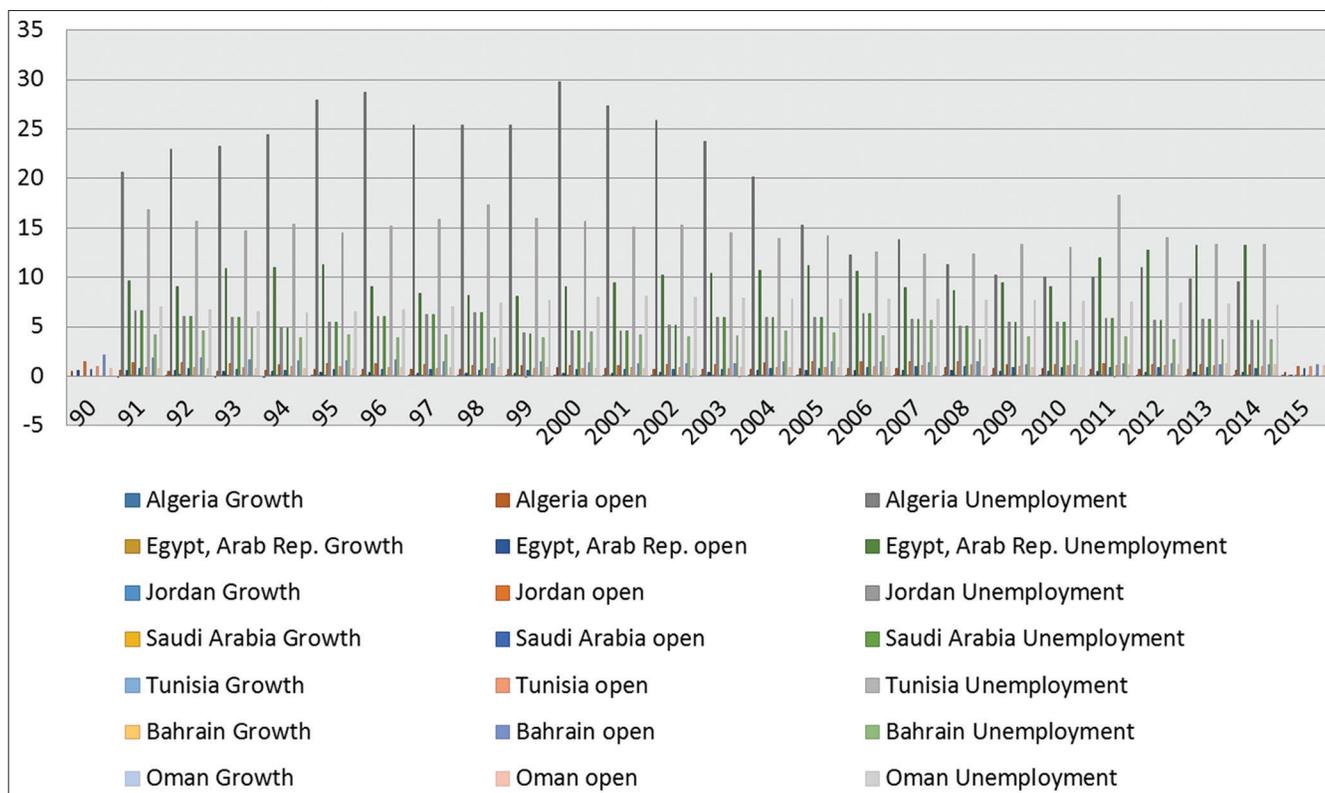
5. EMPIRICAL ANALYSIS

5.1. Data

The study utilizes a sample of even selected Arab countries (Algeria, Bahrain, Egypt, Jordan, Oman, Saudi Arabia, and Tunisia) covering the period 1990-2015. For homogeneity purpose, all the data is taken from one source which is the World Bank data base. The choice of country is dictated mainly by data availability and sub-Arab regions representation.

To avoid the problem of spurious regression, all model variables need to be checked for stationarity. Econometrics evidences indicate that panel based unit root tests have higher power test compared to single time series test. Therefore, this study uses

Figure 1: Development of growth, unemployment, and trade openness in selected Arab Countries, 1990-2015



Source: Based on data taken from The World Bank at <http://data.worldbank.org>

Table 1: WLS estimation, using 175 observations
Included 7 cross-sectional units
Dependent variable: l_Unemp
Weights based on per-unit error variances

Variables	Coefficient	Standard error	t-ratio	
Const	7.01322	0.586333	11.96	***
l_export	-0.394574	0.0804978	-4.902	***
l_import	0.394268	0.0886215	4.449	***
l_rcap	0.218979	0.102530	2.136	**
l_pop	-0.0344529	0.00571413	-6.029	***
l_open	-0.538819	0.0619354	-8.700	***
l_RGDP	-0.395489	0.0984667	-4.016	***

RGDP: Real gross domestic product

Statistics based on the weighted data

Sum squared resid	170.5700	S.E. of regression	1.007620
R ²	0.749285	Adjusted R ²	0.740331
F (6, 168)	83.68050	P-value (F)	7.03e-48
Log-likelihood	-246.0707	Akaike criterion	506.1415
Schwarz criterion	528.2950	Hannan-Quinn	515.1276

***Means significant at the 1% level, and **means significant at the 5% level

Levin-Lin-Chu pooled ADF test (Greene, 2012) and (Pindado and Requejo, 2015).

5.2. Empirical Results

In light of heterogeneous errors across countries as was evident from the results of pooled OLS, the unemployment model in double-log form was re-estimated using panel WLS. The results of estimation are shown in Table 1. Therefore, this study uses cross sectional

data provides larger sample size and hence more efficient estimates (Kao, 1999; Levin et al., 2002). The estimates are based on panel data of 175 observations years 1990-2014 on the seven Arab countries.

The model overall fit is satisfactory as indicated by both adjusted R² and Fisher test. All estimated coefficients carry the correct expected sign and are statistically significant at 5% or better. While more exports lowers unemployment rate, imports increases it by almost the same percentage (0.39). However, the sign of “trade openness” turned out to be the largest in size and negative (equal to about 0.54); meaning that a 1% increase in trade openness decreases unemployment rate in Arab countries covered in the study by 0.54%. Economic growth also lowers significantly unemployment rate by 0.40%, seemingly population growth contributes slightly to lower unemployment. Finally, accumulation of capital goods over time, seems to slightly increase unemployment rate by enabling more capital-intensive methods of production. One possible extension of this study is to enlarge the sample, by either increasing number of countries or number of years or taking shorter span periods: Monthly or quarterly, so that further econometric analysis can be applied to each country separately.

6. CONCLUSIONS

The study provides evidence of large and significant impact of trade openness on employment level in selected Arab countries when taken as one pooled group. On the other hand, as expected real economic growth affected favorably unemployment rates

in this group of countries. The main conclusion that come out of this analysis is that trade openness is playing the expected favorable effect on unemployment in Arab region. The main policy implication that comes out of this conclusion is that trade liberalization policies should continue and even pursued more aggressively in the region. However, to be even more effective trade liberalization should be coupled with investment facilitation and production diversification policies.

REFERENCES

- Gozgor, G. (2014), The impact of trade openness on the unemployment rate in G7 countries. *The Journal of International Trade & Economic Development, an International and Comparative Review*, 23(2), 1018-1037.
- Greene, W. (2012), *Econometric Analysis*. 7th ed. Boston: Prentice Hall.
- Halit, Y. (2013), Is trade liberalization a solution to the unemployment problem? *Portuguese Economic Journal*, 12, 57-85.
- Hasana, R., Devashish, M., Priya, R., Ahsan, R.N. (2012), Trade liberalization and unemployment: Theory and evidence from India. *Journal of Development Economics*, 97(2), 269-280.
- Kao, C. (1999), Spurious regression and residual based test for cointegration in panel data. *Journal of Econometrics*. 90, 1-44.
- Levin, A., Lin, C.F., Chu, C.S.J. (2002), Unit root tests in panel data: Asymptotic and finite-sample properties. *Journal of Econometrics*, 108, 1-24.
- Nwaka, I.D., Uma, K.E., Gulcay, T. (2015), Trade openness and unemployment: Empirical evidence for Nigeria. *The Economic and Labour Relations Review*, 26(1), 117-136.
- Pindado, J., Requejo, I. (2015), Panel data: A methodology for model specification and testing. In: Paudyal, K., Cooper, C.L., editor. *Wiley Encyclopedia of Management*. 3rd ed., Vol. 4. UK: John Wiley & Sons, Ltd.
- World Bank. Available from: <http://www.data.worldbank.org>.

APPENDIX 1

Table (1A): Development of openness, growth unemployment for selected Arab countries: 1990-2015

Year	Algeria			Egypt, Arab Rep.			Jordan			Saudi Arabia		
	Growth	Open	Unemployment	Growth	Open	Unemployment	Growth	Open	Unemployment	Growth	Open	Unemployment
90	0	0.46	0	0	0.56	0	0	1.49	0	0	0.72	0
91	-0.01	0.58	20.6	0.01	0.57	9.6	0.02	1.37	6.6	0.09	0.75	6.6
92	0.02	0.52	23	0.04	0.56	9	0.19	1.32	6	0.05	0.76	6
93	-0.02	0.5	23.2	0.03	0.51	10.9	0.05	1.3	5.9	0	0.68	5.9
94	-0.01	0.57	24.4	0.04	0.44	11	0.05	1.18	4.9	0.01	0.6	4.9
95	0.04	0.66	27.9	0.05	0.43	11.3	0.06	1.25	5.4	0	0.65	5.4
96	0.04	0.68	28.7	0.05	0.37	9	0.02	1.31	6	0.03	0.67	6
97	0.01	0.71	25.4	0.05	0.32	8.4	0.03	1.21	6.2	0.03	0.66	6.2
98	0.05	0.68	25.4	0.04	0.29	8.2	0.03	1.09	6.4	0.03	0.56	6.4
99	0.03	0.7	25.4	0.06	0.28	8.1	0.03	1.05	4.4	-0.01	0.58	4.3
2000	0.04	0.83	29.8	0.05	0.28	9	0.04	1.1	4.6	0.05	0.69	4.6
2001	0.03	0.77	27.3	0.04	0.3	9.4	0.05	1.09	4.6	0.01	0.64	4.6
2002	0.06	0.71	25.9	0.02	0.35	10.2	0.06	1.14	5.2	0	0.65	5.2
2003	0.07	0.68	23.7	0.03	0.41	10.4	0.04	1.16	5.9	0.08	0.7	5.9
2004	0.04	0.67	20.1	0.04	0.56	10.7	0.09	1.35	5.9	0.09	0.75	5.9
2005	0.06	0.76	15.3	0.04	0.58	11.2	0.08	1.47	5.9	0.07	0.82	5.9
2006	0.02	0.78	12.3	0.07	0.54	10.6	0.08	1.42	6.3	0.06	0.9	6.3
2007	0.03	0.81	13.8	0.07	0.56	8.9	0.08	1.46	5.7	0.06	0.95	5.7
2008	0.02	0.85	11.3	0.07	0.63	8.7	0.07	1.44	5.1	0.08	0.96	5.1
2009	0.02	0.79	10.2	0.05	0.51	9.4	0.05	1.15	5.4	0.02	0.85	5.4
2010	0.04	0.75	10	0.05	0.44	9	0.02	1.17	5.4	0.05	0.83	5.4
2011	0.03	0.68	10	0.02	0.45	12	0.03	1.22	5.8	0.1	0.86	5.8
2012	0.03	0.69	11	0.02	0.38	12.7	0.03	1.21	5.6	0.05	0.84	5.6
2013	0.03	0.65	9.8	0.02	0.39	13.2	0.03	1.14	5.7	0.03	0.83	5.7
2014	0.04	0.63	9.5	0.02	0.37	13.2	0.03	1.13	5.6	0.04	0.81	5.6
2015	0.04	0.43	0	0.04	0.13	0	0.02	0.98	0	0.03	0.73	0

Year	Tunisia			Bahrain			Oman		
	Growth	Open	Unemployment	Growth	Open	Unemployment	Growth	Open	Unemployment
90	0	0.94	0	0	2.1	0	0	0.75	0
91	0.04	0.86	16.8	0.11	1.81	4.2	0.06	0.78	7
92	0.08	0.86	15.7	0.07	1.81	4.6	0.08	0.8	6.7
93	0.02	0.88	14.7	0.13	1.65	5	0.06	0.81	6.5
94	0.03	0.93	15.4	0	1.55	3.9	0.04	0.78	6.4
95	0.02	0.94	14.5	0.04	1.52	4.2	0.05	0.8	6.5
96	0.07	0.86	15.2	0.04	1.64	3.9	0.03	0.86	6.7
97	0.05	0.81	15.9	0.03	1.49	4.2	0.06	0.89	7
98	0.05	0.8	17.3	0.05	1.28	3.9	0.03	0.92	7.4
99	0.06	0.78	16	0.04	1.42	3.9	0	0.86	7.7
2000	0.05	0.82	15.7	0.05	1.36	4.5	0.05	0.8	8
2001	0.04	0.9	15.1	0.02	1.27	4.2	0.04	0.81	8.1
2002	0.01	0.85	15.3	0.04	1.31	4	-0.01	0.77	8
2003	0.05	0.82	14.5	0.06	1.28	4.1	-0.03	0.83	7.9
2004	0.06	0.87	13.9	0.07	1.41	4.6	0.01	0.9	7.8
2005	0.03	0.9	14.2	0.07	1.48	4.4	0.02	0.89	7.8
2006	0.05	0.94	12.5	0.06	1.47	4.1	0.05	0.88	7.8
2007	0.07	1.04	12.4	0.08	1.38	5.6	0.04	0.96	7.8
2008	0.04	1.15	12.4	0.06	1.46	3.7	0.08	0.96	7.7
2009	0.03	0.94	13.3	0.03	1.18	4	0.06	0.85	7.7
2010	0.04	1.06	13	0.04	1.2	3.6	0.05	0.9	7.6
2011	-0.02	1.06	18.3	0.02	1.28	4	-0.01	1.16	7.5
2012	0.04	1.08	14	0.04	1.22	3.7	0.09	1.16	7.4
2013	0.03	1.05	13.3	0.05	1.21	3.7	0.04	1.28	7.3
2014	0.03	1.02	13.3	0.04	1.17	3.7	0.03	1.16	7.2
2015	0.01	1.02	0	0.03	1.17	0	0.06	1.09	0

Source: The World Bank, <http://data.worldbank.org>