

## **The Relationship between Unemployment Rate in Jordan with Rates of Foreign Labor Force, Government Expenditure, and Economic Growth**

**Shadi Irshaid AL- Saraireh, PhD**

Assistance Professor

Al Balqa Applied University

Amman University College for Financial and Administrative Sciences

### **Abstract**

This study aimed to explore the relationship between the rates of unemployment in Jordan, RGDP or the economic growth rate, foreign labor force, and government expenditure. It adds new information to the literature of economics in Jordan by that exploration, and highlights notable remarks on selective problems facing Jordan economy. This study utilized economics statistical data from different resources about Jordan to study the topic of this study. The study found significant negative correlation coefficient between unemployment rate and migration labor force, and positive significant correlation coefficient with government expenditure. Another result was the significant prediction relationship between unemployment as dependent variable and government expenditure rate as explanatory variable

**Key Words:** unemployment, foreign labor force, government expenditure, economic growth

### **1. Introduction**

Jordan is a small nation of area= 96000 sq km, it has a small population ( $\approx$ 6.5 millions in 2012), and sparse natural resources, where it has long been known by its Arab neighbors as their "poor cousin." (mongabay.com , 2013). Desert or Badia region, constitutes 75% of the total land area of Jordan, it receives less than 120 mm of rain a year, the remainder are of Jordan are (25% ). This area includes two other distinct climatic zones in addition to Badia climate; they are Jordan valley, and Mountain Heights Plateau. In the average they receive between 300 and 600 mm per year ( jdtours.com, 2013). The agricultural land area is less than half of the un-Badia area ( $\approx$ 11%) of Jordan land, where less than 10% of this area is irrigated with water. (tradingeconomics.com, 2013) Jordan has insufficient supplies of water, oil, and other natural resources, so Jordan's economy is among the smallest economies in the Middle East.

Jordan economy also faces other economic challenges including chronic high rates of poverty (14.2% (2002)), unemployment (12.3% (2012 est.) ), inflation (4.3% (2012 est.)), large budget deficit (-11.4% of GDP (2012 est.), and Public debt (59.1% of GDP (2012 est.)). ( indexmundi, 2013)

Jordan nowadays and in the preceding three decades received huge people immigrations from neighbor Arab countries due to harmful events occurred in them. Jordan in the present time represents a safety shelter for Arab refugees from Iraq and Syria, or who seeks for work as Egyptians and other countries. These immigrations involve also economic challenges for the government in addition to what factors mentioned above, so the government of Jordan is heavily underlined to reliance on foreign assistance. (indexmundi. 2013).

### **1:1 Scope of the problem**

The name and real Gross Domestic Product (GPD), and government expenditure are affected by those crippling factors , which interns affect the size of labor market and unemployment size in that market. In its endeavor; the government of Jordan through the ministry of labor dictated many regulations and legislations to adjust the foreign labor force situations in order to replace them by native ones.

Egyptian workers are apparent in all employment sectors since the 1970s, especially construction, where they constitute about 70 percent of the labor force in that sector, Egyptian workers in the construction sector is because, "construction work is difficult and requires physical labor, which many Jordanians are reluctant or refuse to do" (ar. Amman net. net, 2011).

The Egyptian revolution in 2011 decreased dramatically the size of Egyptian labor size in that sector; they were about 400 thousands where half of them were licensed from the ministry of labor to work in that year (ar. Amman net. net, 2011).

Construction sector of Jordan economy suffered sharply after that; the wages of skilful and unskillful workers as the apartments' prices increased dramatically; while family (of 7 persons) income level in Jordan is still in the same level ( $\approx 4500$  JD/year while the poverty line in Jordan is  $\approx 9000$  JD/year)<sup>1</sup>.

The government expenditure on the other hand decreased and taxes on fuel increased. These dilemmas involved increasing expenditure in Jordanian family daily duties, and evoked some social protesting since 2011 till now<sup>2</sup>.

It is worth here to ask if the existence level of foreign workers, the government expenditure, and the economic growth in Jordan affects Jordanian unemployment rate, as this study tries to handle.

Thus the aim of this study is to find the relationship between unemployment rate with the real GDP (RGDP) or economic growth rate, rate of change of foreign workers in Jordan, and public expenditure percent by Jordan government.

It hypothesized that there are no significant relationship between unemployment rate, and each of; economic growth rate, rate of change of foreign workers in Jordan and public expenditure percent by Jordan government variables.

## 2 Literature Review

### 2: 1 Public Expenditure and Economic Growth

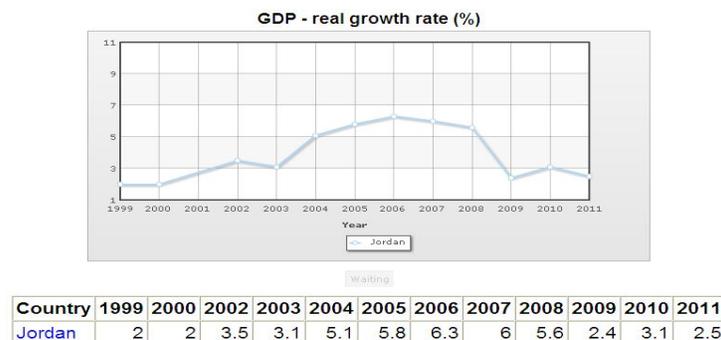
The economic strength of any country is indicated by its gross domestic product (GDP) which measures everything that a country produces in a year (Amadeo, 2013). (GDP) is also an" economic term that is used to provide a monetary value to all the finished goods and services produced in a country over a certain period of time. It includes all private and government consumption, government spending, investments and exports less imports. The equation for GDP is: (investopedia dictinarrt, 2013)

$$GDP=C+G+I+NX \text{-----}(1)$$

where C is equal to consumption, G is equal to government spending, I is the business spending on capital (investments), and NX equals export – imports".

Although GDP measure the economic health of the country, but it is not valid monitor the economics of the country over successive time intervals as years, or to compare between GDP of any year to prior years (Amadeo, 2013).

To perform this task GDP is adjusted to real GDP (RGDP) by removing the effect of price changes, or the impact of inflation (Amadeo, 2013) . The percent rate of (RGPD) is used also to measure the economic growth of the country, which is the increase in the market value of the goods and services produced by an economy over time (wikipedia.org, 2013) .the development of (RGDP) in Jordan for the period from 1999 to 2011 was as shown in the following figure( 1)



**Figure(1): Percentage of Jordan Economic Growth**

<sup>1</sup><http://www.jordannews.com/jordan/14527.html>

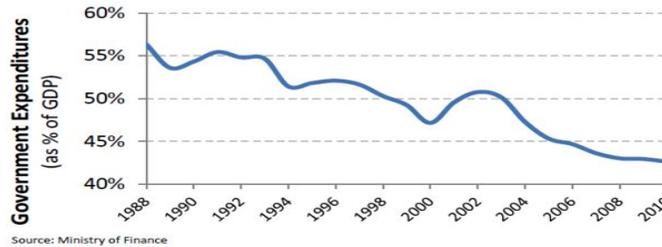
[http://www.petra.gov.jo/public/Arabic.aspx?Lang=1&Page\\_Id=4390&Menu\\_ID=30&Site\\_ID=2](http://www.petra.gov.jo/public/Arabic.aspx?Lang=1&Page_Id=4390&Menu_ID=30&Site_ID=2)

<sup>2</sup> <http://www.albaladnews.net/more-92674-0>

To strengthen the economy of the country for a fiscal year; the government of that country may increase its expenditure to: (Grenade& Wright, 2012)

1. Increase its economic activity; where Wagner theorized a positive relationship between government spending and economic activity in the long run
2. Accelerate economic growth in the short run as Keynes’ theorized.
3. Face recessions or economic downturns by increasing the ratio of government expenditure to GDP more than economic upturns reduce it as Birds hypothesized.

The Public expenditure can be defined as; "The expenditure incurred by public authorities like central, state and local governments to satisfy the collective social wants of the people is known as public expenditure."

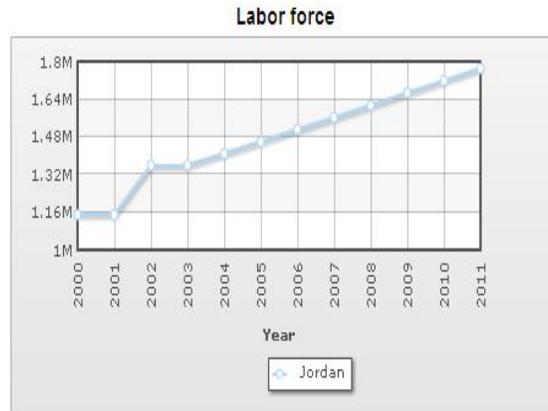


**Figure (2): Jordan Government Expenditure Percent**

In developing countries, public expenditure policy not only accelerates economic growth & promotes employment opportunities but also plays a useful role in reducing poverty and inequalities in income distribution"( Gaurav, 2011). Thus the precise nature of the causal relationship between public expenditure and economic growth is an important public policy issue (Grenade, 2012).

**2: 2 Labor force in Jordan**

Labor force in Jordan includes two types of labor force; the native labor force and the foreign labor force, the total labor force "comprise people ages 15 and older who meet the International Labor Organization definition of the economically active population: all people who supply labor for the production of goods and services during a specified period. It includes both the employed and the unemployed". (Trading economics, 2013) according to that definition; the total Labor force in Jordan increased during the past 12 years as shown in the following figure (index mundi, 2013).



**Fig (3): Total Jordan Labor Force Size (in Millions) Per Year**

Country	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Jordan	1,150,000	1,150,000	1,360,000	1,360,000	1,410,000	1,460,000	1,512,000	1,563,000	1,615,000	1,667,000	1,719,000	1,771,000

The native labor force in Jordan was developed in that period as shown in the tables bellow; table (1) (Taghdisi-Rad, 2012 ) and table(2) ((The Informal Sector in the Jordanian Economy, 2012)

**Table (1): Number of Jordanian Unemployed and Migrant Workers**

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Registered foreign workers	110,580	136,573	127,181	148,823	218,756	261,781	289,730	313,196	303,325	335,708
Unemployed Jordanians	143,730	158,566	171,430	164,431	144,236	177,359	171,390	172,203	170,114	180,284
Employed Jordanians	908,314	920,042	951,612	969,171	1,012,734	1,023,681	1,055,847	1,140,446	1,172,701	1,220,521

Source: Al Manar, 2010 and 2010a.

**Table 2 : Jordanian Labor force, Workers, Participation Rates and Unemployment Rates (2000-2010) (from the Informal Sector in the Jordanian Economy, 2012)**

Unemployment rate (%)	Workers in the economy (thousand)	Total Labor Force (thousand)	Year
13.4	989.2	1142.3	2000
14.7	1002.9	1175.7	2001
15.3	1030.6	1216.8	2002
14.5	1049.3	1227.2	2003
12.5	1094.0	1250.3	2004
14.8	1073.3	1273.3	2005
14.0	1055.8	1226.2	2006
13.1	1140.4	1312.6	2007
12.7	1172.7	1342.8	2008
12.9	1220.5	1400.8	2009
12.5	1235.9	1412.1	2010

Theoretically "Economic growth and unemployment are related because the two concepts are intertwined. The level of unemployment in an economy may affect the rate of economic growth, while the level of unemployment is also an indicator of the state of the economic growth of an economy" (wise geek, 2013).

In the short run, the relationship between economic growth and the unemployment rate may be a loose one. It is not unusual for the unemployment rate to show sustained decline some time after other broad measures of economic activity have turned positive. Hence, it is commonly referred to as a lagging economic indicator (Levine, 2013).

### 3: Previous Studies

Bağdigen & Çetintaş,(2004) conducted a research paper to examine Wagner's Law of long-run relationship between public expenditure and GDP for the Turkish case over the period of 1965-2000 they empirically found no causality in both directions; neither Wagner's Law nor Keynes hypothesis is valid for the Turkish case.

Alexiou(2009) conducted a research paper to find the relationship between Government Spending and Economic Growth: Econometric Evidence from the South Eastern Europe (SEE) . More specifically, the evidence generated indicate that four out of the five variables used in the estimation i.e. government spending on capital formation, development assistance, private investment and trade-openness all have positive and significant effect on economic growth.

Grenade & Wright (2012) conducted a thorough study. It undertakes a re-examination of the empirical validity of Wagner's Law in selected Caribbean countries. The study finds no empirical support for Wagner's Law, with and without population structure taken into account. However, the ratchet hypothesis is validated. The findings provide useful information for policymakers that can help broaden their understanding of the relationship between government spending and economic development, which could aid policy formulation.

Abu Tayeh& Mustafa (2011) conducted a research paper aimed to analyze the factors that affect the Jordanian total government expenditures.

This study also employed a specific methodology to assess the nature of the relationship between Jordanian public spending and its determinants. A main result of this research is that population, unemployment and inflation rates are significantly related to the public expenditures.

Arouri (2007) observed the problem of unemployment in Jordan and discussed whether foreign direct investment flow helps solve the problem of unemployment in Jordan. The empirical results indicated no existence of contributing foreign direct investment flows to the reduction of unemployment in Jordan, due in part to being capital-intensive investments and relying on foreign labor significantly ( Alawin, 2023)

Finally, Awad (2011) studied unemployment issue in Jordan over the period 1977-2010. This study included that to return unemployment rates in Jordan to the normal level (4%), this requires a real economic growth rate of 25%. The empirical results provided support for a strong positive relation between inflation and unemployment ( Alawin, 2023) .

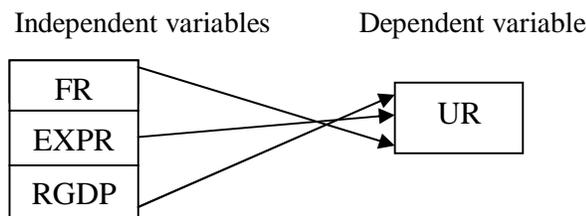
**4: Methodology**

**4:1 Data Description**

The data used in the analysis consist of:

- 1.Real Gross Domestic Product (RGDP), to measure the economic growth of Jordan through the period from 2000 to 2011).
- 2.Total Public expenditure (EXP).
- 3.Jordanian unemployment ratio in the same period (UR).
- 4.Foreign employee's ratio in the same period.

Jordanian unemployment ratio (UR) is the dependent variable, while foreign employee's ratio (FR), Total Public expenditure (EXPR) and Real Gross Domestic Product (RGDP) are the independent variables as shown in the figure bellow



**Figure (4): Research Framework**

The data were collected from different resources (see table 1, figures 1, 2, 3, 4). The data was transformed to ratios as shown in table(2).

Table (2): distribution of no of labor force, Jordanian employed(J.empl), Jordanian unemployed(J.unempl), foreign labor force in Jordan(foreign),government expenditure ratio(EXPR),economic growth(RGDP), and the ratios of J.unempl(UR) and foreign (FR),by year

year	labor force	J.empl	J.unempl	Foreign	RGDP%	FR%	UR%	EXPR%
2000	1142.3	989.2	153.1	110.6	2	9.7	13.4	47
2001	1175.7	1002.9	172.8	138.6	3	11.8	14.7	50
2002	1216.8	1030.6	186.2	127.2	3.3	10.5	15.3	51
2003	1227.2	1049.3	177.9	148.8	3.1	12.1	14.5	50
2004	1250.3	1094	156.3	218.8	5.1	17.5	12.5	47
2005	1273.3	1073.3	200	261.8	5.8	20.6	15.7	45
2006	1226.2	1055.8	170.4	289.7	6.3	23.6	13.9	45
2007	1312.6	1140.4	172.2	313.2	6	23.9	13.1	44
2008	1342.8	1172.7	170.1	303.3	5.6	22.6	12.7	44
2009	1400.8	1220.5	180.3	335.7	2.4	24.0	12.9	43
2010	1412.1	1235.9	176.2	370.3	3.1	26.2	12.5	43

The ratio of foreign labor force in Jordan (foreign) was extracted by taking the total labor force in Jordan as the denominator of ratio formula, and the number of foreign labor force in Jordan as numerator. In the same manner the transformation of Jordanian unemployed to ratio (UR) was done.

**4:2 Models of the Data**

Linear multiple regression analysis is used to explore the predictive relationship between the dependent and the independent variables handled in the figure above (fig 4). The linear regression equation can be written in raw form as:

$$UR = \text{constant} + b_1 \times RGDP + b_2 \times FR + b_3 \times EXPR \text{ ----- (2)}$$

Or in the standardized quantities, it can be written as:

$$Z_{UR} = \beta_1 \times Z_{RGDP} + \beta_2 \times Z_{FR} + \beta_3 \times Z_{EXPR} \text{ ----- (3)}$$

Where  $b_1, b_2, b_3$  are raw regression coefficients of the variables presented in eq( 2) and  $\beta_1, \beta_2, \beta_3$  are the standardized regression coefficients in in equation (3).

**5: Results**

**5:1 Correlation Relationship**

The table (3) shows two significant correlation coefficients between Jordanian unemployment rate (UR) with foreign labor force ratio (FR), and

**Table (3): Pearson Correlation Coefficients between variables in the model**

		RGDP	FR	UR	EXPR
RGDP	Pearson Correlation	1.000	.515	-.315	-.346
	Sig. (2-tailed)	.	.105	.346	.298
	N	11	11	11	11
FR	Pearson Correlation	.515	1.000	-.699*	-.910**
	Sig. (2-tailed)	.105	.	.017	.000
	N	11	11	11	11
UR	Pearson Correlation	-.315	-.699*	1.000	.846**
	Sig. (2-tailed)	.346	.017	.	.001
	N	11	11	11	11
EXPR	Pearson Correlation	-.346	-.910**	.846**	1.000
	Sig. (2-tailed)	.298	.000	.001	.
	N	11	11	11	11

government expenditure ratio (EXPR); where their values were -0.699, 0.846 respectively. These values are significant at ( $p \leq 0.05$ ), ( $p \leq 0.01$ ) as shown in the table above.

table (3) also shows a high correlation coefficient between government expenditure (EXPR) and foreign labor force (FR) in Jordan; the correlation coefficient was (- 0.91), which is significant at level of significance ( $p \leq 0.01$ ).

The government expenditure (EXPR) is not correlated significantly at ( $p \leq 0.05$ ) with the economic growth (RGDP) ( $R = -0.346$ ).

**5:2 Prediction Relationships**

The linear model is fit for the data model where R Square (shared variance between dependent and independents) =.76 which is significant at ( $p \leq 0.01$ ) where F-value=7.474 (see the upper part of the table below).

**Table (4): Multiple Regression Analysis Outcomes**

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.873 <sup>a</sup>	.762	.660	.5724	.762	7.474	3	7	.014

a. Predictors: (Constant), EXPR, RGDP, FR

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-8.592	8.521		-1.008	.347
	RGDP	-1.00E-01	.140	-.163	-.712	.500
	FR	9.461E-02	.081	.605	1.165	.282
	EXPR	.448	.159	.605	2.825	.026

a. Dependent Variable: UR

The lower part of the table above shows a predictive relationship between ( EXPR )independent variable and the dependent variable(UR), where the raw regression coefficient B=0.448, and the standard regression coefficient(β)=0.605. T-test vale for theses coefficients=2.825, which is significant at (p≤ 0.01). Thus the model equation can be written as:

$$UR=0.448 \times EXPR$$

**6: conclusion**

The findings of negative non significant relationship between government expenditure and economic growth (-0.35) indicates that the government expenditure did not play a significant positive role in economic growth measured by real GDP, which disagrees with many studies as: Grenade & Wright (2012), and Alexiou (2009), those studies handled the validity of Wagner law which states a significant positive relationship between public expenditure and economic activity in the long run, where creating new labor opportunities for unemployed labor force is one of economic activity indicators, and RGDP is an another indicator of it .

On the other hand the mentioned above result is agreed with what Bağdigen & Çetintaş,(2004) found, where there were no causal relationship in a both sides between economic growth and public expenditure.

This study may evoke different questions about the mission of the government expenditure; where the findings of this study shows that the government expenditure is not playing in favor of unemployed labor force. Many studies may be conducted for this issue.

The negative correlation coefficient between foreign labor force (FR) and unemployed demotic labor force (UR) is agreed with Arouri (2007) & Awad (2011) who found a significant relationship between Jordanian unemployed labor forces with inflation.

The strange results from this study; is the significant correlation and prediction relationship between unemployed labor force (UR) as a dependent variable and the government or public expenditure in Jordan (EXPR) variable as an independent variable , which means increasing expenditure lead to increase unemployment in the native labor force. This paradox may need to be verified or studied with other technics.

This study may evoke different research questions about the policy of Jordan government, and its mission to manage the public expenditure to be in favor of the Jordanian unemployment labor force, and to increase the the real GDP, and its economic activity.

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