

# Impact of the Public Debt on Deficit of the Public Budget in Jordan for the Period (1998-2014)

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This research is funded by the Deanship of Research in Zarqa University /Jordan

## ABSTRACT

The study aimed to identify the impact of the public debt on deficit of the public budget in Jordan for the Period (1998-2014), as well as impact of the internal and external debt on the deficit of the public budget in Jordan. The study found a number of results most notable was:

- a. There exist a statistically significant impact at the significance level ( $\alpha = 0.05$ ), for the public debt on deficit of the public budget in Jordan for the Period (1998-2014).
- b. There exist a statistically significant impact at the significance level ( $\alpha = 0.05$ ), for the internal debt on deficit of the public budget in Jordan for the Period (1998-2014).
- c. There is no a statistically significant impact at the significance level ( $\alpha = 0.05$ ), for the external debt on deficit of the public budget in Jordan for the Period (1998-2014). The study concluded to a number of conclusions.

**Keywords:** Public debt, Internal debt, External debt, Public Budget deficit, Jordan.

## 1. INTRODUCTION

The state public budget is considered as a tool or method which can whereby state funds management and its expenses for a specific financial period, in such a way to adjust the expenditure operations within the limited financial resources, and to avoid increase the expenditure size and the worsening of the public debt as a result of financing the budget deficit by loans and funding sources, not from the self-financing sources for the state. The worsening of the deficit problem in the state public budget, leading to the imposition of pressures on the maker the monetary and fiscal policies, and be a barrier to achieving the welfare of the people to provide a good or good service and reasonable prices and the appearance of the problem of inflation, and thus lower the level of living of the citizens. This problem may threaten to state entity, if the accumulated debt exceeds a reasonable limit and control of funders and impose its policies on the borrower state, and then control by the political decision, economic and even the social of that State.

In Jordan, it considered the budget deficit, indebtedness, and the deficit in the current account and low foreign exchange reserves of the major challenges facing the Jordanian economy at this time. Jordan's the public debt has continued to rise in recent years, where recorded as a record figures exceeded the debt ratio of GDP the permitted limit universally, and increased the balance capita from the public debt as a result, during the same period, this is shown by the financial bulletins official from the Ministry of Finance in (1998-2014), that are being used in this study.

## 2. METHODOLOGY

### 2.1. The Study Problem

the worsening of the public debt in Jordan and its impact on the public budget deficit is a big problem, the problem is the accumulation of indebtedness and its impact on the frequency and increase the deficit in the public budget annually, and it became obvious considered the indebtedness as accumulated deficit for the public budget over the past years, which was reflected on emergence of an economic disease and social affected the state's ability to provide the services to citizens and increase the poor class of people and increasing rates of unemployment and the recession, which affected and affects the welfare of the people and the level of provided services, and will affect the social security and increases the burdens of the state in all areas, let's face it we must

analyze the problem in all its details and components and access to their causes, and try to examine the decisions taken to curb this problem and what can be suggestion to contribute in process it albeit part of the problem.

## 2.2. The Study Importance

- a. Finding appropriate solutions to reduce the impact of public debt on the public budget deficit in Jordan for the Period (1998-2014).
- b. Supporting the Jordanian Library with specialized research in the field of the public budget deficit.
- c. Open new horizons for researchers regarding these researches, as well as the use of applied research method on other sectors of the Jordanian economy.

## 2.3. The Study Objectives

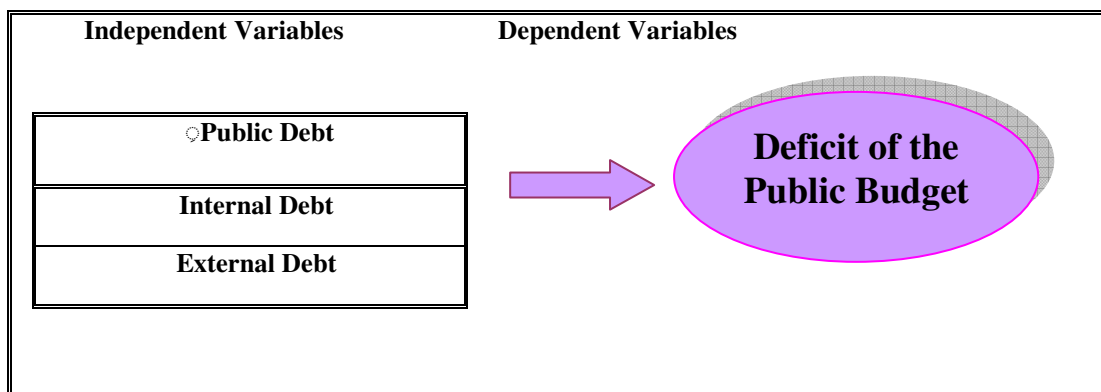
This study aims to measure and analyze impact of public debt on deficit of the public budget in Jordan for the period (1998-2014), and through the following sub-objectives:

- a. Analysis impact of the public debt on deficit of the public budget in Jordan for the period (1998-2014).
- b. Analysis impact of the internal debt on deficit of the public budget in Jordan for the period (1998-2014).
- c. Analysis impact of the external debt on deficit of Jordanian public budget for the period (1998-2014).

## 2.4. The Study Model

In light of the study objectives was to propose the following study model, for the purpose of analyzing the impact of the public debt on deficit of the public budget in Jordan for the Period (1998-2014). As shown in the following Figure No. (1):

Figure 1. The Study Model



Source: Prepared by the researcher.

## 2.5. The Study Hypotheses

To achieve the study objectives, the researcher develop the following hypotheses as a null form ( $H_0$ ):

**$H_0$ :** There is no a statistically significant impact at the significant level ( $\alpha \leq 0.05$ ), for the **public debt** on deficit of the public budget in Jordan for the period (1998-2014).

The study hypothesis is divided to the following sub hypotheses:

**H<sub>01</sub>:** There is no a statistically significant impact at the significant level ( $\alpha \leq 0.05$ ), for the **internal debt** on deficit of the public budget in Jordan for the period (1998-2014).

**H<sub>02</sub>:** There is no a statistically significant impact at the significant level ( $\alpha \leq 0.05$ ), for the **external debt** on deficit of the public budget in Jordan for the period (1998-2014).

### 3. LITERATURE REVIEW

After taking a look at some studies related to the external indebtedness of Jordan, a group of studies relevant to the study theme had been chosen. Al-Momani (1995) identifies the causes of the external indebtedness of Jordan by identifying the extent of Jordan's ability to assume the burden indebtedness, in addition to the economic effects on a number of economic variables for the period (1967-1991). Also, Iyoha and Milton (1999) discussed the impact of the external debt on the economic growth in the countries of Saharan African for the period (1970-1994), and the study concluded that there exist a negative impact of the external debt on the investment, it was found that the external debt lowers the investment and thus a negative impact on the economic growth. Karagol (2002) pointed out to the nature of the relationship between the external debt service and the economic growth in Turkey for the period (1956-1996), where found that the relationship between the external public debt service and the economic growth is an inverse relationship in the long term. Abbas and Jakob (2007) refer to the existence of a positive and strong relationship between the internal debt and the economic growth in a study of (93) States from the low-income for the period (1975-2004). Jayaraman & et al., (2008) explained that the increase in the flow of aid and the external dept clearly contributed to in increasing the economic growth rates in (6) six nations of the Pacific nations for the period (1988-2004). Butts (2009) pointed out to a causal relationship between the external public debt and economic growth in (13) nations of (27) nations from Latin America and the Caribbean nations for the period (1970-2003). Sheikh & et al., (2010) indicated that there exist a positive relationship between the internal debt and the economic growth in Pakistan for the period (1972-2009), this means that the money which generated through the domestic borrowing may be partly used to finance the government expenditures, which contribute to the growth of GDP. Al-Hussein (2000) was interested in studying the decision-making techniques in the public budget with a special focus on the Jordanian public budget. Abu Mustafa (2009) addressed the role of external financing and its importance in the coverage of permanent disability for the budget of the Palestinian National Authority in the comparative analysis study for the period (1999-2008). Al-Husaree, (2010) focused the attention to study the impact of the budget deficit on the interest rate in Jordan during the period (1996 – 2008). Tareq and Alameen (2011) it has researched to know ways and methods related to the financing of the budget deficit in the postural economy and Islamic economy and the difference between them, and focused on the general principles of the budget, for example, the principle of customization, unity and imbalance. Al-Sous & Al-Halabi (2011) discussed the concept of the fiscal deficit and its impact on the Jordanian economy, and identify the both sides of the public budget and reach to the deficit value during the period (1977- 2006).

While Abu-Zuaiter (2012) focused on the role of the local revenues to finance the public budget of the Palestinian Authority as an entry to strengthen local revenues in order to cover the budget deficit during the period (2000-2010).

### 4. RESULTS AND DISCUSSION

#### 4.1. Data Collection

The study is mainly depending on the secondary data related the (public debt, internal debt, external debt, and deficit of the public budget in Jordan for the period (1998-2014). The researcher selects the above data from the Department of Statistics (national accounts) and the Central Bank of Jordan (annual statistical data). As shown in Table (1) below:

**Table 1. Internal debt, External debt, Public debt and public budget deficit in Jordan for the period (1993-2014) (million dinners)**

Years	Public debt	Internal debt	External debt	Public budget deficit
1998	6340.7	1007	5333.7	-310.6
1999	6399.1	889	5510.1	-93.6
2000	6165.7	1120	5045.7	-209.9
2001	6007.1	1289	4718.1	-188.4
2002	6654.3	1521	5133.3	-1231.8
2003	6890.5	1679	5211.5	658.1
2004	7192.9	1945	5247.9	546.0
2005	7372.7	2316	5056.7	1572.6
2006	8016.5	2830	5186.5	- 46.1
2007	8775.3	3522	5253.3	-578.3
2008	8860.7	5524	3336.7	-237.8
2009	10317.5	6771	3546.5	-1472.45
2010	11514.9	7412	4102.9	- 981.4
2011	12666.0	8694	3972.0	-1283.8
2012	14678.1	10422	4256.1	-1734.8
2013	15032.9	10364	4668.9	- 2168.5
2014	8930.3	4406.6	4523.7	-5297.2

**Resource:**

- <http://www.mof.gov.jo> (The Ministry of Finance).
- <http://web.dos.gov.jo> (Department of Statistics).
- <http://www.cbj.gov.jo> (The Central Bank of Jordan).

**4.2. Results Related to Test the Hypotheses**

Before testing the study hypotheses, some tests to be applied on the study data, should be validated as follows:

**a. One-Sample t-Test**

This test was used to validate the homogeneity of the data. Table (2) shows the results of One-Sample t-Test:

**Table 2. Results of One-Sample t-Test**

No.	Study Variables	t-values	df.	Sig.
1	Public debt	12.547	16	0.000
2	Internal debt	5.196	16	0.000
3	External debt	29.585	16	0.000
4	Public budget deficit	-3.641	16	0.012

**[The critical value of (t) with (df. = 16) and ( $\alpha = 0.05$ ) = 1.746].**

According to the table (2), the results showed that the study data was characterized by high homogeneity. This could be proved by (t) values of (12.547, 5.196, 29.585, -3.641) of (Public debt, Internal debt, External debt, and Public budget deficit) respectively. In which all these values are more than the critical value of (t).

### b. One-Sample Kolmogorov-Smirnov Test

This test was used to check whether the study data distributed Normal Distribution or not. Table (3) shows the results of testing the normal distribution property by using (One-Sample Kolmogorov-Smirnov) test, as follows:

**Table 3. Results of (One-Sample Kolmogorov-Smirnov) Test**

No.	Study Variables	N	Kolmogorov-Smirnov	Sig.
1	Public debt	17	0.849	0.467
2	Internal debt	17	0.784	0.570
3	External debt	17	0.923	0.362
4	Public budget deficit	17	0.690	0.728

According to the table (3), the results showed that all the statistical significance values (Sig.) were more than the significance level ( $\alpha = 0.05$ ). In light of the previous results, the variables data were distributed Normal Distribution).

After assuring that the variables data were characterized by high homogeneity, and that were distributed normal distribution, making it ready for having all analytical tests.

#### 4.2.1. Test the Study hypothesis

The purpose of this section to present the results of the statistical analysis of data about measure the impact of the public debt on deficit of the public budget in Jordan for the Period (1998-2014). which was reached through using of the Statistical Package for Social Sciences (SPSS). The researcher will test the study hypothesis and it's sub-hypotheses as follows:

**H<sub>0</sub>:** There is no a statistically significant impact at the significant level ( $\alpha \leq 0.05$ ), for the **public debt** on deficit of the public budget in Jordan for the Period (1998-2014).

In order to test the validity of the study hypothesis was used the simple linear regression analysis. As shown in table (4) and (5) below:

**Table 4. Summary of Simple Linear Regression Model**

R	R <sup>2</sup>	F <sub>Ratio</sub>	Sig.	df.
0.514	0.264	5.387	0.035	(1 , 15)

[Tabulated (F) with df. (1, 15) at the significance level ( $\alpha = 0.05$ )] = 4.54

The results in table (4) show that:

**a.** Validity of simple linear regression is proven, this is supported by the calculated value (F) (5.387) which is greater than the tabulated (F) equaled to (4.54), and that the significance value (0.035) is less than the significance level ( $\alpha = 0.05$ ).

**b.** The value of the (R<sup>2</sup>) of (0.264), refers to the (public debt) interprets (26.4%) of the changes that happen in (deficit of the public budget) in Jordan for the Period (1998-2014).

**Table 5. Results of Simple Linear Regression Analysis to measure the impact of the public debt on deficit of the public budget in Jordan**

Independent Variable	Coefficients ( $\beta$ )	Std. Error	t - value	Sig.	Beta
Constant ( $\beta_0$ )	1826.878	1107.923	1.649	0.120	-
Public debt	0.274	0.118	2.321	0.035	0.514

The results in the table (5), explained that:

**a.** There exist a statistically significant of regression coefficient ( $\beta$ ) for the (public debt) was proven. Therefore, there exist a statistically significance impact at the significant level ( $\alpha = 0.05$ ) for the (public debt) on deficit of the public budget in Jordan. Depend on the (Sig.) value (0.035), and this value is less than the significant level ( $\alpha = 0.05$ ), this means that the null hypothesis ( $H_0$ ) is **rejected**, based on the above results.

**b.** The value of the standardized coefficient (Beta) calculated for (public debt) which is (0.514), show that increase of the (public debt) by a unity standard deviation will lead to increase the (deficit of the public budget) of Jordan by (51.4%).

After the researcher had finished from test the study hypothesis, and was verified the existence of the impact of (public debt) on deficit of the public budget in Jordan, should be test the impact of (internal debt and external debt) on (deficit of the public budget), as follows:

#### 4.2.1.1. Test the 1<sup>st</sup> sub-hypothesis

**H<sub>01</sub>:** There is no a statistically significant impact at the significance level ( $\alpha \leq 0.05$ ), for the **internal debt** on deficit of the public budget in Jordan for the Period (1998-2014).

In order to test the validity of the 1<sup>st</sup> sub-hypothesis was used the simple linear regression analysis. As shown in table (6) and (7) below:

**Table 6. Summary of Simple Linear Regression Model**

R	R <sup>2</sup>	F <sub>Ratio</sub>	Sig.	df.
0.528	0.279	5.798	0.029	(1 , 15)

[Tabulated (F) with df. (1, 15) at the significance level ( $\alpha = 0.05$ )] = 4.54

The results in table (6) show that:

**a.** Validity of simple linear regression is proven, this is supported by the calculated value (F) (5.798) which is greater than the tabulated (F) equaled to (4.54), and that the significance value (0.029) is less than the significance level ( $\alpha = 0.05$ ).

**b.** The value of the (R<sup>2</sup>) of (0.279), refers to that (internal debt) interprets (27.9%) of the changes that happen in (deficit of the public budget) in Jordan for the Period (1998-2014).

**Table 7. Results of Simple Linear Regression Analysis to measure the impact of the internal debt on deficit of the public budget in Jordan**

Independent Variable	Coefficients ( $\beta$ )	Std. Error	t - value	Sig.	Beta
Constant ( $\beta_0$ )	418.994	546.225	0.767	0.455	-
Internal debt	0.247	0.103	2.408	0.029	0.528

The results in the table (7), explained that:

a. There exist a statistically significant of regression coefficient ( $\beta$ ) for the (internal debt) was proven. Therefore, there exist a statistically significance impact at the significant level ( $\alpha = 0.05$ ) for the (internal debt) on deficit of the public budget in Jordan. Depend on the (Sig.) value (0.029), and this value is less than the significant level ( $\alpha = 0.05$ ), this means that the null hypothesis ( $H_{01}$ ) is **rejected**, based on the above results.

b. The value of the standardized coefficient (Beta) calculated for (internal debt) which is (0.528), show that increase of the (internal debt) by a unity standard deviation will lead to increase the (deficit of the public budget) of Jordan by (52.8%).

#### 4.2.1.2. Test the 2<sup>nd</sup> sub-hypothesis

$H_{02}$ : There is no a statistically significant impact at the significance level ( $\alpha \leq 0.05$ ), for the **external debt** on deficit of the public budget in Jordan for the Period (1998-2014).

In order to test the validity of the 2<sup>nd</sup> sub-hypothesis was used the simple linear regression analysis. As shown in table (8) and (9) below:

**Table 8. Summary of Simple Linear Regression Model**

R	R <sup>2</sup>	F Ratio	Sig.	df.
0.394	0.155	2.754	0.118	(1 , 15)

[Tabulated (F) with df. (1 , 15) at the significance level ( $\alpha = 0.05$ )] = 4.54

The results in table (8) show that:

a. Validity of simple linear regression is not proven, this is supported by the calculated value (F) (2.754) which is less than the tabulated (F) equaled to (4.54), and that the significance value (0.118) is greater than the significance level ( $\alpha = 0.05$ ).

b. The value of the (R<sup>2</sup>) of (0.155), refers to that (external debt) interprets (15.5%) of the changes that happen in (deficit of the public budget) in Jordan for the Period (1998-2014).

**Table 9. Results of Simple Linear Regression Analysis to measure the impact of the external debt on deficit of the public budget in Jordan**

Independent Variable	Coefficients ( $\beta$ )	Std. Error	t - value	Sig.	Beta
Constant ( $\beta_0$ )	- 5049.304	2691.487	-1.876	0.080	-
External debt	0.939	0.566	1.659	0.118	0.394

The results in the table (9), explained that:



a. There is no a statistically significance impact at the significant level ( $\alpha = 0.05$ ) for the (external debt) on deficit of the public budget in Jordan. Depend on the (Sig.) value (0.118), and this value is greater than the significant level ( $\alpha = 0.05$ ), this means that the null hypothesis ( $H_{02}$ ) is **accepted**, based on the above results.

b. The value of the standardized coefficient (Beta) calculated for (external debt) which is (0.394), show that increase of the (external debt) by a unity standard deviation will lead to increase the (deficit of the public budget) of Jordan by (39.4%).

## 5. CONCLUSIONS

This part deals with the most important conclusions that reached by this study, which are as follows:

a. There exist a statistically significant impact at the significance level ( $\alpha = 0.05$ ), for the public debt on deficit of the public budget in Jordan for the Period (1998-2014).

b. There exist a statistically significant impact at the significance level ( $\alpha = 0.05$ ), for the internal debt on deficit of the public budget in Jordan for the Period (1998-2014).

c. There is no a statistically significant impact at the significance level ( $\alpha = 0.05$ ), for the external debt on deficit of the public budget in Jordan for the Period (1998-2014).

d. The results explain that increase of the (public debt) will lead to increase the (deficit of the public budget) of Jordan.

e. The results explain that increase of the (internal debt) will lead to increase the (deficit of the public budget) of Jordan.

f. The results explain that increase of the (external debt) will lead to increase the (deficit of the public budget) of Jordan.

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