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The Impact of Public Expenditures on the Indicators of Economic Growth in Jordan during the Period 2002-2015

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Abstract *This study dealt with the impact of public expenditures on some of the economic variables in Jordan during the period (2002-2015). The appropriate statistical analysis (e-views) was used. The study concluded the most important results, of which is the fact that there is a positive impact of public and current capital expenditure and on some economic variables. There is also a positive statistically significant relationship between public and current capital expenditure and Gross Domestic Product (GDP) and the share of the individual from GDP. The study recommended a set of recommendations, the most important of which is the following: Jordanian government should have a special concern about capital and current expenditure as they have a positive impact and direct effect on GDP and part of it.*

Key words Capital expenditures, economic prosperity, unemployment, poverty, current expenditures, GDP, income average of the individual

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1. Introduction

The level of economic progress which the advanced countries have reached has helped in the development of those countries and their progress in many fields. This progress has been reflected on their economic and social development.

The policies which the advanced countries have followed, in an organized way, have become an example, starting with examined inputs and ending with outputs of high returns and great benefit at both economic and social levels. Concerning this, this study came to show the impact of public expenditure on GDP and the individual's share from it in Jordan. In order to achieve its economic and social aims, the government resorts to public expenditure through the financial policy it carries out. It determines its public expenditures and then determines its revenues. Public expenditures reflect the extent of its impact on the economic activity. With the development of the role of the government, from the guarding government, to the interfering one, to the productive one, public expenditures have developed and so has its concept, and has stated to play a wider role in influencing some economic variables Public expenditure is mainly defined as cash amounts a common person pays for the sake of satisfying general needs. From this definition, we can determine three bases (pillars) for public expenditure that should be available as follows:

1. Monetary form of public expenditure where it should take a monetary pattern, namely, it happens in the form of cash flows and consequently all non-monetary means are eliminated, which were previously used such as material means.

Monetary pattern of public expenditure is represented in what is relating to what the government or its general committees pay to get productive materials in the form of commodities or services.

2. Issuing the public expenditure from a place or common person or general occupation where financial thought, in order to distinguish between public expenditure and special expenditure, used the legal criterion, based on the legal nature of the person who carries out expenditure and occupational criterion based on the nature of the occupation which issues expenditure.

3. The aim of public expenditure should be satisfying a public need, namely, achieving the public welfare of society where the individuals of society in public benefit from those public expenditures offered by the government because its collecting happens from the individuals.

This study concentrated on public expenditure as it is very important in national economy and society. These expenditures contribute to the increase of national product and increase of the individual's share from GDP. Public expenditures are those which the government directly allocates to use part of the economic resources of society in producing commodities and services in order to satisfy the public needs and which lead to the creation of a new product and increase of national income in a direct way.

Current and capital public expenditures lead to the occurrence of a direct increase in wages and salaries, as well as it leads to social and special purposes through the transfer social expenditures which go to the advantage of poor classes and which lead to the increase in demand of basic consuming commodities.

2. Study importance

Public expenditure is considered as an indicator of economic growth which should be reflected on GDP when directed in fair way to achieve the aims of society. So, the importance of the study comes from the fact that it sheds light on the economic and social effects of public expenditures and their desired effects on society.

3. Study aims

The study aims at identifying the economic effects achieved by public expenditures during the years of study and also identifying the government's contribution extent through the application of its financial policies and their reflection on the level of the individual's share of GDP.

4. Study methodology

This study was based on the analytical approach by using economic data and indicators of the years of study issued by the public institutions in the Hashemite Kingdom of Jordan and the use of a measurement model which explains the impact of public expenditures on GDP and the individual's share of GDP.

5. Study hypothesis

The study was based on a main hypothesis which stated that public expenditures have an important role in the impact on GDP in Jordan and the individual's share from it. Sub-hypotheses:

The main hypothesis has the following Sub-hypotheses:

1. There is a statistically significant impact between capital public expenditures and GDP.
2. There is a statistically significant impact between current public expenditure and GDP.
3. There is a statistically significant relationship between capital public expenditure and the individual's share from GDP.
4. There is a statistically significant relationship between current public expenditure and the individual's share from GDP.

6. Study problem

The study problem lies in the ability of public expenditures to allocate part of the public revenues from different sectors and their effect on responding to the government's general aims through the implementation of its economic and social policies which aim at raising the living standard and individual's prosperity. Therefore, the problem can be formed through the following questions:

1. What is the impact of capital public expenditures on GDP?
2. What is the impact of current public expenditures on GDP?
3. What is the impact of capital public expenditures on the individual's share from GDP?
4. What is the impact of current public expenditures on the individual's share from GDP?

7. Literature review

Ali Seif Al-Mazrou'i study (2012) was about the impact of public expenditure on domestic product which revealed a strong effect of public expenditure on GDP, showing that the increase in public expenditure in the United Arab Emirates led to the increase in GDP. The study also revealed the existence of a GDP. The study also revealed the existence of a significant effect, on the part of public expenditure, on all the main and secondary components of GDP.

Dirwassi Mass'oud study (2006) was about the financial policy and its role in achieving economic balancing – the state of Algeria (1990-2004). The study reached the fact that the applied financial policy in Algeria during the period of the study changed the growth of public expenditure and rise of its averages from one year to another. The study showed the non-existence of balance in general which was considered by the study as a structural fault represented in the more growth of public expenditures than public revenues.

Bin Izzah, Mohammad's study (2010) was about rationalizing the policy of public expenditure by following the control approach (an evaluative study of the policy of public expenditure in Algeria during the period 1990-2009). The study reached the fact that public expenditures are an important way used by the government to perform its functions, and the increase in public expenditures is considered as one of the distinguishing features of public financial affairs in advanced and underdeveloped countries. The study considered rationalization in public expenditures is the way to avoid the scarcity problem shortage of the sources of financing. Exact limitation and lessons may greatly contribute to raising the rationalization of the employment of public money.

Mohammad Darrat Al-Khadir's study (2014) was about the impact of financial policy on the performance of Sudanese economy during the period (2005-2010). The study found out fluctuation and instability in governmental expenditure as a result of the absence of planned policies of government expenditure. The study found out the increase in the ratio of the actual performance of taxes during the study period and the non-accomplishment of national expenditure with a complete ratio of performance except for the years 2008-2009.

Bin Nawwar Bu Midian's study (2011) was about public expenditures on education- the study of education sector in Algeria (1980-2008). The study found out that public expenditures were an instrument in the hand of the government used for the sake of achieving economic and social aims, which cannot be achieved without the perfect employment of these expenditures. The study also reached the fact of the role of education in achieving development with all its forms and that expenditure on education is an investment in human capital.

Mohammad Ali Jassim's study (2015) was about current public expenditures and their role in their distribution of income with a special reference to chosen experiments. The study found out the fall of public expenditures from 2003 to 2011 due to the consequences of the fall of the prices of petrol revenues, in a way that affected the amount of Iraqi budget and consequently its reflection on the bulk of expenditure. The study also showed the performance weakness of the institution in regard to health care, housing and the decrease in the amount of general budget appropriations for the Institution of Martyrs.

Hashem Mohammad Al-'Arkoub's and Al-Ta'ai Uddy's study (2006) was about general attitudes of current expenditures of selected Arab countries for the period 1980-2002. This study found out that current expenditures are of a great significance for any country in order to lift poverty through what the government offers in regard to expenditures and aids where people who receive them prefer cash aids to material ones as they are more aware of the needs which satisfy their desires. The study recommended the necessity for encouraging the government of the Arab countries to vary the forms of support offered to categories of society and the necessity for taking great concern about governmental aid in the case of economic crises.

8. The relationship of public expenditure with GDP and the individual's share from GDP

We notice from Table 1 the increase of the bulk of capital and current expenditure in spite of the disorders and political and economic problems which the Arab region in general undergoes and which have been reflected on Jordanian economy specifically through the flow of refugees to Jordan. The fact which caused an economic burden on the country's treasury, taking into account that the article of public expenditures as one of most important components of general balance.

Therefore, the Jordanian government worked for creating encouraging and stimulating national policies which lie in the rationalization and control of public expenditure for the sake of expanding the article of capital and current expenditures. They reached (7724.7) million JDs in 2015; based on that, Jordan achieved a lot of various achievements in the field of sustainable development and the program of economic change in an effective way. In spite of the political and economic challenges which the region undergoes, Jordan, by virtue of its economic policy, has been able to achieve what is possible in regard to continuous growth in different economic activities and change of challenges into opportunities which can be exploited. The estimates of GDP in 2015, with prices of current market, showed (26637.4) JDs compared with (6698.8) million JDs in 2002. The whole expenditure increased in 2015 to reach (7724.7) compared with (2296.7) million JDs in 2002. This was reflected on the rise in the individual's income average from GDP to reach (2786.6) in 2015, compared with (1257) in 2002, which was directly reflected on the increase of whole demand of commodities and services, and this can be considered as one of the direct impacts of public expenditure.

Table 1. Capital expenditures and current expenditures

Individual's share from GDP	GDP	Total	Capital expenditures	Current expenditures	Year
1257	6698.8	2296.7	438.8	1857.9	**2002**
1284.5	7039.1	2542.6	485.4	2057.2	**2003**
1510.5	8090.7	2930.4	603.9	2326.5	**2004**
1630.8	8941.5	3538.9	630.9	2908	**2005**
1805	9997.4	3912.3	789.5	3122.8	**2006**
2200.9	12595.6	4586	841.8	3744.2	**2007**
2665.5	16108	5431	949.6	4481.4	**2008**
2828.1	17815.6	5976.3	1439.7	4536.6	**2009**
3069.2	19527.9	5708.2	962.8	4745.4	**2010**
3275.8	20470.2	6801.8	1058.5	5743.3	**2011**
2957.5	21965.5	7644.4	998.4	6646	**2012**
2939.6	23851.6	7065.4	1015	6050.4	**2013**
2889.3	25437.1	7852.9	1136.3	6716.6	**2014**

Source: prepared by the researcher based on the data issued by the Department of General statistics and Amman chamber of commerce.

9. Study statistical analysis

The first model: the impact of public expenditure represented by (GDP).

The estimate and evaluation of regression models for estimating the impact of the independent variables on the dependent variable (GDP) in Jordan, the way of linear regression was used and by the help of (E-Views) program. The estimate results came as follows:

First: Regression Model Estimate

Table 2. The estimate results of liner function of the first multi-regression model

Dependent Variable: GDP

Variable	Coefficient	t- Statistic	Prob.
LOG(CX)	15694.46	12.83001	0.0000
Δ ((KX))	0.320198	1.771337	0.1069
C	-114684.3	-11.25144	0.0000

Source: Prepared by the researcher with the help of E-Views program.

As shown in Table 2, the estimate results of the regression model were as follows.
Adjusted R-Squared: %93 R-Squared: =%94.3 F= 100 D-W= 1.176

From Table 2, we notice that the sign of independent variables (Cx) is moral at 1%, sign of dependent variable (Kx) is moral at 10%.

GDP = -114684.3+15694.46 LOG(CX) +0.320198 Δ(kx)   (1)

Second: model evaluation according to economic criterion, through the second column of Table (1) Coefficient, which includes the values of estimated signs, the following are shown:

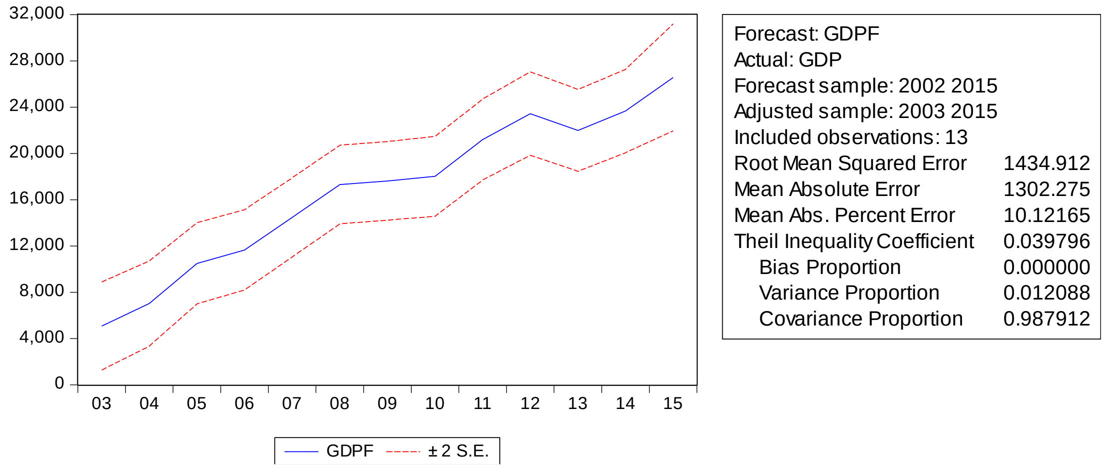
- The value of the constant equals (-1148.3) - negative mark.
- The coefficient value of capital expenditure (Kx) equals (0.320198)- positive mark, which conforms with economic and financial literature.
- The co-efficient value of current expenditure (CX) equals (15694.46) –positive mark, which conforms with economic and financial literature.

Model evaluation according to statistical criterion:

It is clear from the model that the Adjusted R squared is 93% which means that changes in independent variables together explain about (93%) of the changes occurring in the dependent variable. The value of statistic (F) reached (100), and at the significant level (Prob.) reached the zero value. This means that the model is statistically significant, and Darwin-Watson co-efficient (DW) reached (1.176), that is to say that the model is appropriate and statistically significant. Hence, we cannot judge the problem of inherent correlation (Systematic Error).

Testing the prediction ability of the model:

We can test the efficiency extent and ability of the model to predict the impact of public expenditures on GDP in Jordan by using the coefficient of (Variance proportion) as figure 1 explains.



Source: Prepared by the researches with the help of E-Views program.

Figure 1. The model's prediction ability

The researcher conducted some measurement tests to make sure of the test stability and validity, through the tests and the graph in the figure 1. The values of the test stability and validity, through the tests and the graph in the figure 1. The values of Bias proportion were zero and variance proportion was 1% and covariance value was equal to (987%), and it is a significant that the error in the model was random. It also indicates that the prediction ability of the model of the impact of public expenditures on GDP in Jordan was satisfactory.

Third: Study Hypotheses Testing

The first hypothesis:

There is a statistically significant impact (α=0.05) between capital public expenditure and GDP. It was revealed from the measurement estimate of the model that the value of capital public expenditure coefficient (Kx) equals (0.320198) - a positive mark, which means that the relationship between the change in capital public expenditure represented by (GDP) is positive, which conforms with economic and financial literature and emphasizes the existence of a positive relationship between capital public expenditure and GDP. It statistically means the existence of a positive impact of capital public expenditures on GDP and means the increase in capital expenditures with (100%) which leads to the government increase of GDP with a ratio of (0.320198). the reason for this:

based on T-Test, this result is characterized by statistical significance the level of (10%), which means that the trust level of this variable equals (90%), and statistically means the existence of a positive impact of capital public expenditures on GDP, and consequently the acceptance of the hypothesis which states the existence of the hypothesis which states the existence of a statistically significant difference at the significant of (α=0.05) between capital public expenditure and GDP.

Second Hypothesis:

There is a statistically significant impact at the significant level (α=0.05) between the current public expenditure and GDP. It was revealed from the model's measurement estimate that the value of current public expenditure coefficient (Cx) equals (1.322974)- a positive mark, which means that the relationship between the change in GDP is positive. This conforms with financial and economic literature which emphasizes the existence of a positive relationship between current public expenditure (CE) and GDP. This means the increase of (100%) in current expenditures which leads to the government's increase of GDP with a ratio of (1.322974). The reason is as follows:

Based on T. Test, this result is characterized by statistical significance the level (1%) which means that the trust level of this variable equals (99%). This statistically means the existence of a positive relationship between current public expenditure and GDP in Jordan, and consequently the acceptance of a statistically significant impact at significance level (α=0.05) between current public expenditure and GDP.

Second Model:

The impact of public expenditure on the individual's share from GDP (PK).

- Estimate and evaluation of regression model: the method of multi linear regression was used in order to estimate the impact of independent variables on the dependent variable of the individual's share from GDP (PK) in Jordan. By the help of (E-Views) program, the estimate results came as follows:

First: Estimate of regression model

Table 3. Estimate results of the linear sign of the first multi linear regression
Dependent Variable: PK

Variable	Coefficient	t- Statistic	Prob
LOG(CX)	1628.711	8.897718	0.0000
Δ ((KX))	-0.041621	-1.538688	0.1549
C	-11134.76	-7.300274	0.0000

Source: Prepared by the researcher with the help of E-Views program

According to Table 3 the estimate results of the regression model were as follows:
Adjusted R-Squared: %86 R-Squared: =%88 F= 40 D-W= 1.07

From table 3 above, we notice that the mark of independent variables (current public expenditure (CX) is significant the level 1%, while the mark of the independent variable capital public expenditure (KX) is not significant. The model was estimated and the results appeared as follows:

$$GDP-11134.763 + 1628.711 \text{ LOG } (CX) + 0.041621 \, \Delta \, (Kx) \qquad (2)$$

Second: Evaluation of regression model.

The evaluation of the model according to the economic criterion through the second column of Table 1 (Coefficient) which includes the values of estimated signs, the following appears:

The value of the constant © equals (-11134.76) - a negative mark.

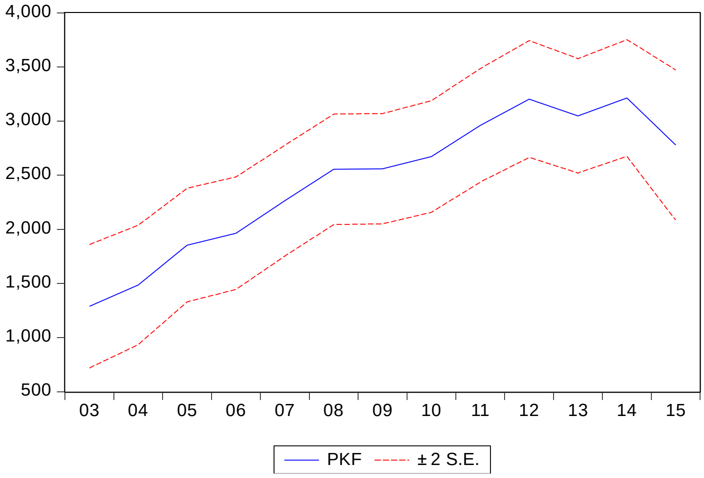
- The value of current expenditure coefficient (Cx) equals (1628.711) - a positive mark.

It conforms to economic and financial literature.

Evaluating the model according to the statistical criterion: It is noticed from the model that the limitation coefficient is (86%). This means that the changes in the independent variables together explain about (86%) of the changes occurring in the dependent variable. The value of (F-statistic) was (40) and with a level of significance (Prob.) whose value reached zero. This means that the model is statistically significant, and Darwin-Watson coefficient was (1.07), which means that the model is appropriate and statistically significant and there is no problem of inherent – correlation or (systematic Error).

Testing the prediction ability of the model:

Testing the validity and ability of the model to predict the impact of capital expenditures, on the individual's share from GDP in Jordan, can be conducted by using variance proportion coefficient as shown in figure 2.



Forecast: PKF	
Actual: PK	
Forecast sample: 2002 2015	
Adjusted sample: 2003 2015	
Included observations: 13	
Root Mean Squared Error	214.7194
Mean Absolute Error	173.2621
Mean Abs. Percent Error	6.694165
Theil Inequality Coefficient	0.042451
Bias Proportion	0.000000
Variance Proportion	0.029126
Covariance Proportion	0.970874

Source: Prepared by the researcher the help of E-views program

Figure 2. Testing the extent of the predication ability of the model

Third Hypothesis: there is a statistically significant impact at significant level (α=0.05) between capital public expenditure and the individual's share from GDP it was revealed from the measurement estimate of the model that the value of capital, public expenditure coefficient (Kx) equals (-0.041621) –a negative mark, which means that the relationship between the change in capital public expenditure and the change in the individual's share from GDP was negative.

This does not conform to economic and financial literature which emphasizes the existence of a positive relationship between capital public expenditure and the individual's share from GDP. The reason for this: Based on T. Test, this result is not characterized with statistical significance at level (5%), and this statistically means the non-existence of impact of capital public expenditure on the individual's share from GDP, and consequently the non-acceptance of the hypothesis which states the existence of a statistically significant impact at significance level (α=0.05) between capital public expenditure and the individual's share from GDP.

Fourth Hypothesis: there is a statistically significant impact at significance level (α=0.05) between current public expenditure and the individual's share from GDP. It was revealed from the model's measurement estimate that the value of current public expenditure coefficient (Cx) equals (1628.711) – appositive mark, which means that the relationship between the change in current public expenditure and the change in the individual's share from GDP is positive. It conforms to the economic and financial literature which emphasizes the existence of a positive relationship between current public expenditure (Cx) and the individual's share from GDP and which means (100%) increase of current expenditures that lead to the government's increase of the individual's share from GDP (1628.711).

The reason for this is:

Based on T- Test, this result is characterized by the statistical significance of (1%), which means that the trust level of this variable equals (99%). It statistically means the existence of a positive relationship between current public expenditure and the individual's share from GDP in Jordan, and consequently the acceptance of the hypothesis which states the existence of statistically significant impact at significant level (α=0.05) between current public expenditure and the individual's share from GDP.

10. Results and recommendations

Results:

1. There is a statistically significant positive relationship between current public expenditure and GDP.
2. There is a statistically significant positive relationship between capital public expenditure and GPD.
3. There is a statistically significant positive relationship between current public expenditure and individual's share from GDP.
4. There is no impact of capital public expenditures on the individual's share from GDP in a direct way because capital expenditures are dedicated to spending on investment, service and production projects which do not lead to the increase in the individual's share from GDP in a direct way in the short term.

The study recommends the following: There should be a special concern about public expenditures, and the government should work for increasing them as they have importance and a positive impact on GDP and the individual's share from it. The study also recommends the necessity for caring about current public expenditures, especially salaries and ways and they have their impact on the increase of the individual's share from GDP and consequently its increase in Jordan, which indirectly reflects on the economic prosperity of Jordanian society.

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