The Impact of Government Expenditures, Taxes On Economic Growth in Jordan

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Abstract:
The objective of this paper is to investigate the effect of taxes and government expenditures on economic growth in Jordan using a time series data for the period 1970-2017.Gross Domestic Product (GDP) was adopted as the dependent variable while Taxes (T) and government expenditure (GE) represents the independent variables. In addition, this study used Autoregressive Distributive Lag (ARDL), the unit root tests Augmented Dickey-Fuller (ADF), Phillip-Perron (PP) for the analysis .The study found that the taxes and government expenditure at the aggregate level have a significant positive impact on economic growth.

Keywords: *Economic Growth, Government Expenditure, Taxes*

1.0 INTRODUCTION

Taxes and government expenditures play an important role in supporting and stabilizing the national economy. The view among policymakers as well as economists is that the government can play a prominent role in economic growth. (Omran, 2017). According to Ugwuanyai and Ugwunta (2017), government spending and taxation, these patterns influence the employment and the level of growth aggregate demand. Government spending and taxation enhance the ability of governments to manage the economy through control their income and purchasing power in order to achieve specific objectives which lead to economic growth. The Jordanian economy is one of the emerging economies open to the outside world and is vulnerable to many shocks at the local and external levels. It is clearly suffering from the repercussions of crises occurring internationally, regionally and locally; which affects it significantly (Al-Khaldi, 2008). Moreover, the Jordanian economy did not repeat its strong performance in the 1970s. However, since 1990, performance has become unstable. In addition, the recent growth performance has been weak (Alam et al., 2017). The following figure showed the patterns of government expenditure and taxes.

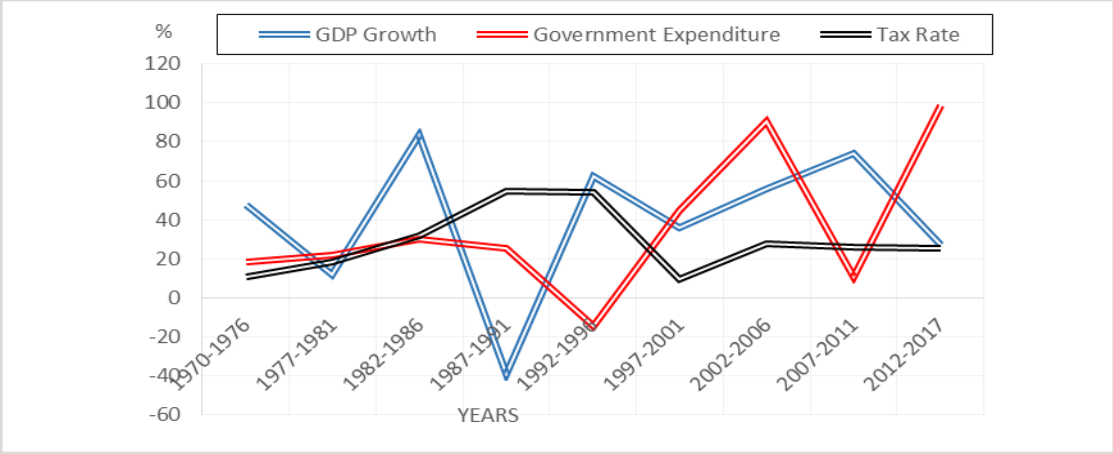

Figure 1.1 Changes of the Gross Domestic Product Growth (GDPG), Government Expenditure and Tax rate 1970-2017

The above figure 1.1 revealed there are some fiscal concerns related to the management of public expenditure and taxation in this country, it is disturbing to note that government expenditure seems to have not replicated the same level of economic growth in Jordan, for instance, between 1997 and 2006, government expenditure growth rate was increasing (44.68% to 90.48%), likewise, economic growth rate was increasing (35.96% to 56.05%). Thus, there is a Positive relationship between the two periods. However, it is found that the growth rate of government expenditure in 2007 and 2017 rate was increasing (10.83% to 98.84%), respectively, while the economic growth rate was decreasing (74.24% to 26.95%) in the same period respectively. Thus, there is an inverse relationship between the two periods. Also, there has not been much improvement in tax revenues over the decades. For instance, between 2002 and 2017, the tax

growth rate was stable (25%), while, the economic growth rate was increased in the first period and then became diminished.

Due to that above the argument has been indecisive on whether or not increasing government spending induces economic growth or not, the same applies to taxes. Based on the above, this paper attempts to examine whether increasing government spending and taxes induce an economic growth performance in Jordan. The major objective of this study is, therefore, to ascertain whether there is the effect of taxes and government expenditures on economic growth in Jordan during the period (1970-2017).

2.0 LITERATURE REVIEW

Many studies of the relationship between fiscal policy and economic growth were conducted, Government spending, tax revenues, variables have been used by these authors and found different responses of macroeconomic activities to fiscal policy. As stated by Riba, (2017) investigated the effect of taxes in general and across the main three tax forms, value added tax (VAT), corporate income tax (CIT) and personal income tax (PIT) on economic growth in South Africa. They used quarterly data the period 2003 - 2016 and utilized the ARDL cointegration technique to observe the long run association among economic and taxation advance at the combined tax level. Their results indicated the presence of long run association only at tax category levels. Their results suggested that a direct association exists among taxes and growth.

Biswas, Chakraborty, and Hai, (2017) investigated how the decrease of income inequality over tax program influences economic growth. Taxation at several plugs of income sharing has diverse effects on households' inducements to work, consume, and invest. They used U.S. state-level data and micro-level household tax returns over the last three decades; they discovered that reducing income inequality among low and median income households enhances economic growth. Nevertheless, decreasing income inequality through taxation among high-income households and the median decrease in economic growth. These asymmetric economic growth impacts are attributable jointly to supply-side factors (i.e., labour supply and changes in little business activity) and to consumption demand.

Ivanyna, Moumouras, and Rangazas, (2016) used a dynamic general equilibrium model to quantify the impact of the consequences of tax evasion and corruption on financial policy and economic growth. The model is calibrated to match estimates of tax evasion in developing countries. The calibrated model is ready to come up with reasonable predictions for net tax rates, the corruption related to public investment comes, and therefore the negative correlation between tax revenue and corruption. Addition to that, the presence of evasion and corruption has shown to possess important, however not big, negative effects on economic growth. The comparatively moderate effects facilitate make a case for the absence of a sturdy correlation between growth and corruption in data. The model conjointly suggested that cracking down on evasion before addressing corruption will be a substandard idea.

d'Agostino, Dunne, and Pieroni, (2017) utilized a broad panel of countries for the period of 1970–2014 to examine the long-run equilibrium connection between military spending and economic growth. They also applied a more flexible pooled mean group calculator and compared the findings with the more restraining dynamic fixed effect technique which has been used in earlier significant researches. Additionally, they compared the results of samples from different time and countries. Across the specifications, they detected a noteworthy and persistent negative effect which was of a military burden on economic growth that is strong across different country groups, with the biggest impact being for OECD countries.

Mehrara, Abrishami, Boroujli, and Amin, (2013) examined the causal relationships between Government Recurrent Expenditure (GRE) and GDP for Iran using annual data over the period 1970-2010. The Gregory-Hansen (1996) cointegration technique, allowing for the presence of potential structural breaks in data, is applied to examine the long-run co-movement between these variables empirically. Their results suggested that there is a long-run relationship between these variables. The Granger Causality test indicated strong unidirectional effects from GDP to GRE. But there is no evidence that TRE promoted long-term economic growth. Moreover, the main results in their study confirmed that there is an instantaneous as well as

unidirectional causal link running from GDP to GRE. Based on the results, the policymakers should ensure that recurrent expenditures are properly managed to accelerate economic growth. Moreover, the government should promote efficiency in the allocation of resources by encouraging more private sector participation to ensure productivity-intensive growth. Additionally, Alshahrani and Alsadiq, (2014) examined the effects of different types of government expenditures, on economic growth in Saudi Arabia. They used different econometric techniques to estimate the short- and long-run effects of these expenditures on growth. Moreover, they employed annual data over the period 1969-2010. Their findings indicated that while private domestic and public investments, as well as healthcare expenditure, stimulate growth in the long-run, openness to trade and spending in the housing sector can also boost short-run production. They have drawn some policy implications for Saudi policymakers on maximizing the returns of the government spending on economic growth.

3.0 METHODOLOGY

This study employed annual secondary time-series data on Taxes and government expenditures variables that were sourced from 2018 Central Bank statistical bulletin. The data covered the period 1970 to 2017, taxes. Autoregressive Distributed Lag (ARDL) model bound testing approach was adopted to carry out co-integration among variable of interest. The econometric analysis originates from the extended neo-classical model of Mankiw, Romer, and Weil (1992), is one of the most extensively used models as it broadens the simple neoclassical growth model by human capital. Similarly, it is vital to understand that taxes represent the most important source of public budgets it is essential to include government spending into the analysis since those accordingly signify the basic expenditure part of public budgets (Macek, 2014). In respect to this study, individual variables of the analyzed model can be written as:

$$GDP_t = \alpha_1 + \beta_1 GE_t + \beta_2 T_t + \varepsilon_t \qquad (1)$$

Where, GDP – Gross Domestic Product Growth
T- Taxes rate
GE–Government Expenditure
Fixed limit - α_1
Regression line coefficients - β_1 and β_2
ε_t–the error term
t = 1970 ... 2017

4.0 RESULTS

Testing of the Unit Root Test

ADF test and PP test unit root test were used to test the unit root hypothesis to all variables. Table 1 reported a summary of these test results

	ADF		PP	
Variables	Level	1st Diff.	Level	1st Diff.
	t stats	t stats	t stats	t stats
GDPG	-3.02	-11.71*	-2.31	-14.16*
GE	-3.055	-6.962*	-3.102	-6.963*
T	0.824	-4.168*	-4.656	-4.325*

Table 1above shows the results of the unit root. The result shows that the order of integration of the variables is at *I*(1). All the variables are non-stationary at a level at 1% level of significance. After the first difference, they become stationary. However, this unique order of integration allows this study to employ the ARDL Bound test of long-run cointegration. Although ARDL method can be applied in the case of a mixed order of integration, i.e., *I*(0) and *I*(1) but in the case of *I*(2), calculated F-statistics would not provide meaningful results (Ouattara, 2004).

Table 2 Lag Selection

Lag	AIC	SC
0	6.212	6.334
1	-0.852	-0.366
2	-1.259*	-0.408*
3	-0.965	0.251
4	-0.868	0.713

After the unit root test, the selection of lag length is vital for the ARDL model to calculate F-statistics for cointegration (Shahbaz and Rahman, 2010). Table 4.2 indicates lag 1 as an optimal lag to be used. For both AIC and SC information criterion

Table 3 Bound Test Results

Test Statistic	Value	k
F-statistic	4.956207	2
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.63	3.35
5%	3.1	3.87
1%	4.13	5.00

To examine the relationship between tax, government expenditure and economic growth in Jordan, this study applies the long-run nexus between the variables with the aid of the ARDL Bounds test. The empirical results from table 3 indicate that the computed F-statistics exceeded the upper bound of 5%. Therefore, the null hypothesis suggesting the absence of a long-run relationship is rejected at 5% significance level. However, economic growth as a dependent variable also has a long-run nexus with the rest of the regressors at 5% level of significance.

Table 4 Long run and Short run

Short run Coefficient				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLNGE	0.402*	0.105	3.829	0.000
DLNT	0.562*	0.047	11.802	0.008
ECM(-1)	-0.371*	0.111	-3.335	0.002
Long Run Coefficients				
LNGE	0.113	0.029	3.897	0.000
LNT	0.889	0.134	6.634	0.000
C	-1.553	3.733	-0.416	0.679

Table 4.6 represented the long-run and short-run results. The standard errors are given in bracket. Tax and government expenditure have a positive and significant effect on growth in both periods of the analysis. The result showed that in the long-run, a 1% increase in tax would be accompanied by 88.9% rise in growth, assuming that all things remain the same, while in the short-run, a 1% rise in tax will lead to 56.2% increase in growth. Moreover, the elasticity of government expenditure indicated that a 1% increase in government expenditure would be accompanied by 11.3% increase in growth in the long run, while in the short-run, a 1% rise in government expenditure will lead to 40.2% increase in growth.

The lagged error term ECT_{t-1} indicates -0.371 at 1% level of significant meaning that, the short run shocks or deviations are corrected by the speed of 37.1% towards the long-run equilibrium. In addition, changes from the equilibrium level of output growth are corrected by more than 37%, confirming our results that indicate a long-run nexus between the variables. In theory, the value *ECM (-1)* must be significant and negative which is exactly the case in the present study. The higher the coefficient, the more stable the short-run association.

5.1 The Parameters Stability Analysis

The stability of the parameters within the periods of study is investigated using the Cumulative sum of recursive residuals (CUSUM) and the Cumulative sum of squares of recursive residuals (CUSUMsq) developed by Brown et al. (1975). These tests are crucial as a result of if there's misspecification of a model, assessed coefficients may shift in time series dates. Then it is likely to have biased estimates that can affect the explanatory power of the empirical results (Hansen, 1992). Regarding sensitivity, residuals are not very sensitive when there are small parameter variations. It is potential to discover the deviations through recursive residual analysis. Recursive residual is predictable to have a value of zero if the null hypothesis of the parameter consistency is correct and if the parameters are not consistent, recursive residual will have non-zero predictable values due to parameter variation (Brown et al., 1975). Furthermore, Figure 2 and Figure 3 showed the graphical presentation of CUSUM and CUSUMsq, respectively. From the graphs, straight lines indicate critical bounds at 5% significant level. The results show the consistency of the parameters since the plot of the tests is within the acceptable boundaries at 5% level of significant, i.e., the regression coefficients are stable over time (Shahbaz et al., 2013).

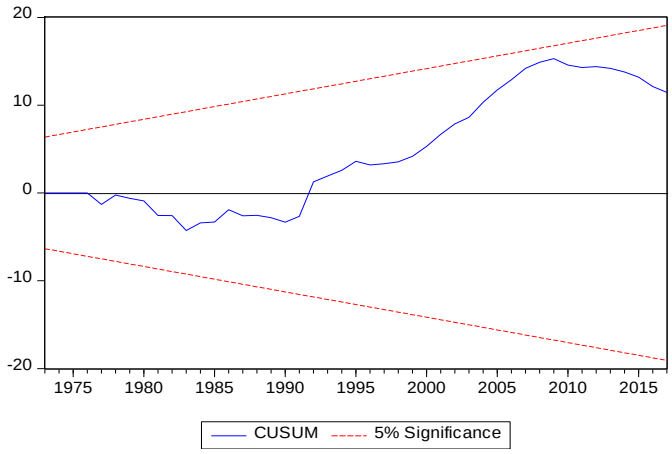

Figure 2: Plot of Cumulative Sum of Recursive Residuals

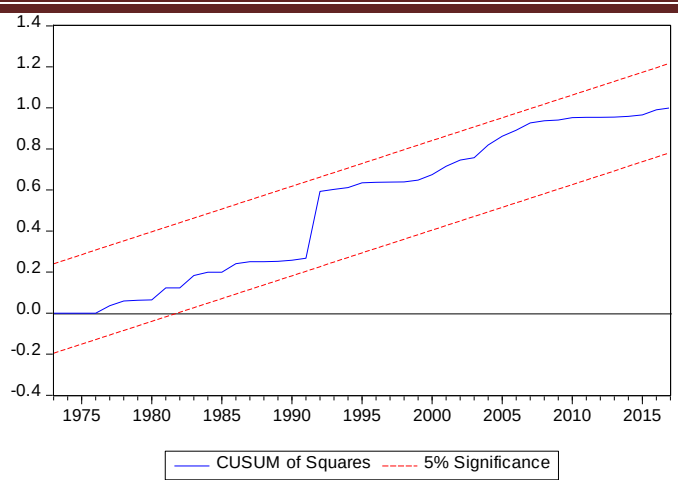

Figure 3: Plot of Cumulative Sum of Squares of Recursive Residuals.

6.0 CONCLUSION

This study examined the impact of fiscal policy on economic growth over the period 1970–2017. PP and ADF unit root test is used to test the unit root hypothesis to all variables. The results of PP and ADF unit root tests show that all variables are integrated of order one. In addition, the results of the unit root tests allow us to use ARDL cointegration methods. The results showed that there is a long run relationship between tax, government expenditure and economic growth. It is clear from the economic growth equation that all variables are vital factors affecting economic growth. The positive and significant coefficients of tax and government expenditure indicated that contractionary fiscal expanding occurs in Jordan. The main reason for the contractionary fiscal expansion in Jordan is that government activities are mostly politically motivated and productive and therefore emancipates economic growth.

7.0 RECOMMENDATIONS

Based on the findings, the following recommendations are suggested;

1- Government spending in industries if properly managed will raise the nation's production capacity, which in turn will increase economic growth in Jordan.

2- Review and reformulate the tax system to avoid loopholes in the previous law, so as to target high income holders and address tax evasion.

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