

THE RELATIONSHIP BETWEEN PUBLIC EXPENDITURE AND ECONOMIC GROWTH IN KOSOVO: FINDINGS FROM A JOHANSEN CO-INTEGRATED TEST AND A GRANGER CAUSALITY TEST

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Abstract. *In the scientific literature, there are two opposing views on the relationship between public expenditure and economic growth. The Keynesian view states that public expenditure is an exogenous factor that influences economic growth and can be used as a policy instrument. This point of view is in contrast to the Wagner view that the public expenditure is seen as an endogenous factor or an outcome, not a cause, of economic growth. The primary objective of this study is to test the views of Keynes’s versus Wagner’s in the case of Kosovo by using Public Expenditure (G), Gross Domestic Product and three other components of GDP: Foreign Direct Investment (FDI), Export (EXP) and Total Budget Revenue (TRtax); the variables used in this analysis are quarterly time series data spanning from 2004–2016. To accomplish the set objectives, the Johansen co-integrated technique is used to investigate the long-run relationship between public expenditure and economic growth, while the Granger causality test is used to know the direction of flow between variables. This study discovers that there is a unidirectional causality between government expenditures and economic growth in Kosovo. It is also found that there is a bidirectional causality between total budget revenue and public expenditure. On the other hand, results also provide evidence that there is a bidirectional causality between export and economic growth. Moreover, the results for Kosovo indicate that data for the period considered support the Keynesian view.*

Keywords: *public expenditure, economics growth, co-integration, causality, Kosovo.*

1. Introduction

The relationships between public expenditure and economic growth have attracted enormous attention within literature devoted to economics. The literature addresses this issue abundantly; it has also fueled controversy as to the direction of causality, creating two different and contrasting views. One of the main questions in this regard is which one of these two variables is exogenous and which is endogenous.

According to Keynes’s view, public expenditure is seen as an exogenous factor to be used as a policy instrument to influence economic growth (Ansari, Gordon & Akuamoah

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1997). Public expenditures are important factors for achieving macroeconomic objectives (Danladi, Akomolafe, Olarinde & Anyadiegwu 2015). Generally, the empirical literature shows that economic growth is determined by public expenditure activity in many developing countries (Sinha, 1998). Empirically, the Keynesian point of view is supported by Cheng & Lai (1997), Biswal, Dhawan, & Lee (1999), Ansari (1993), Wajid & Kashif (2016), Magazzino (2012) and Ebaidalla (2013). To test the Keynesian point of view, we used a functional form expressing GDP per capita in the function of public expenditure:

$$\frac{GDP}{N} = f\left(\frac{G}{GDP}\right)$$

Relying on this assumption, many developing countries after World War II have incorporated fiscal policies, public expenditure in particular, as important tools to boost economic growth. These governments have followed the Keynes theory, which aims to boost economic growth by boosting government spending through the multiplier effect (E. Stiglitz 1980; Tanzi & Zee 1997; King 2012; Slemrod, Gale & Easterly 1995).

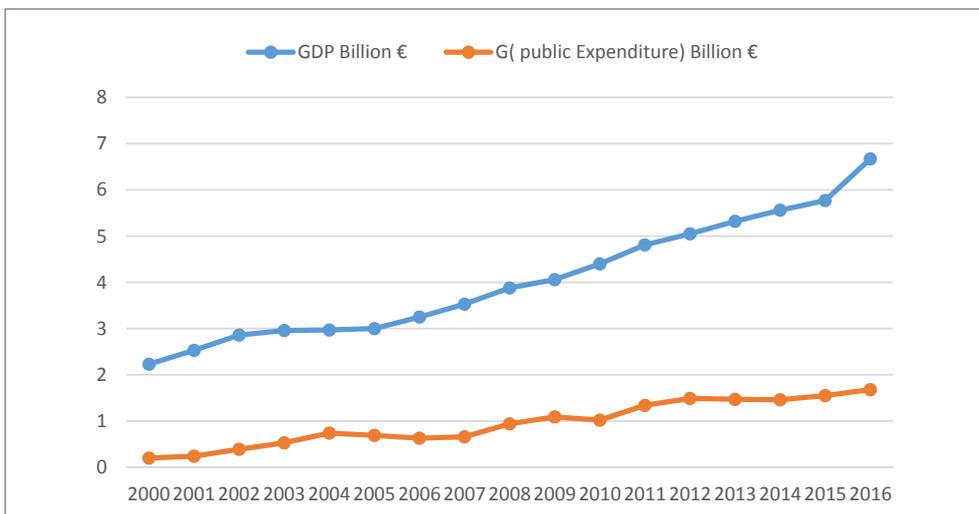
However, various empirical studies have taken place for measuring the impact of public expenditure on economic growth and achieved different results. These studies argued that rising government expenditure on physical infrastructure, health, defense, education and R&D, mainly based on productive spending, will impact and influence the direction of economic growth. Whereas increasing public expenditure, which is based on non-productive spending, such as consumption expenditure, does not have any impact on growth. Those studies are based on endogenous growth models supported by Slemrod, William & Easterly (1995), Barro R. (1990), Barro & Martin (1990), Mendoza (1997), Dar & AmirKhalkhali, Aschauer (1989).

In the literature that regards these topics, a contrast to the Keynesian view – the Wagner hypothesis – states that public expenditure is an outcome of economic growth. It means that Wagner argues for public expenditure as an endogenous factor that hereupon cannot be relied on as a policy instrument. According to Hossain (2013), Wagner postulates that economic growth is the determinant of growing public expenditure and government intervention in the economy. Empirically, the Wagner view is supported by Musgrave (1988), Salih M. A. (2012), Menyah & Wolde-Rufael (2012), Bayrakdara, Demez & Yapar (2015), Magazzino (2012), Al-Faris (2002).

Moreover, Bird (1971) points out that Wagner was the first economist to mention a positive relationship between economic growth and public expenditure. During the last decades, especially during the period of 1960–1980, there were other scholars – Musgrave (1969), Gupta (1967), Goffman (1968), Peacock & Wiseman (1979) and Mann (1980) – who inquired into the causality between economic growth and public expenditure. All these scholars tried to authenticate and describe Wagner’s law by using different methods and approaches, which are also provided below and summarized by Afxentiou P. C. (1998) and Dasgupta (2013):

- a. $G = f(Y)$ Peacock – Wiseman (1961)
- b. $GC = f(Y)$ Pryor (1968)
- c. $G = f\left(\frac{y}{N}\right)$ Goffman (1968)
- d. $\frac{G}{N} = f\left(\frac{Y}{N}\right)$ Grupta (1967) and Michas (1975)
- e. $\frac{G}{Y} = f(Y)$ Mann's (1980)
- f. $\frac{GE}{y} = f\left(\frac{Y}{N}\right)$ Musgrave (1969)

After the war, in the 2000, Kosovo had embraced capitalism and the likewise market economy as well. As a result, the economy of Kosovo enjoyed a steady growth from 2000 to 2016. At the same time, as we see on Graph 1, except economic growth, public expenditure has also increased. In 2016, the public expenditure in Kosovo reached 1.9 billion, concluding up to 29.9% of the country's GDP (Ministry of Finance of the Republic of Kosovo). An increase of public expenditure was driven by an increase in the social and economic programs used for combating poverty, unemployment and improving the quality of education and access to health care. Specifically, public spending on capital investment over the years has absorbed the bulk of public spending by a share of 37.9% or 11% of the GDP, respectively. Moreover, 2008 was the year when the whole economy had fallen into a financial crisis. The recession of this year has captured most of the developed countries. However, in spite of the developments in the global economy, Kosovo's economy expects economic growth in real GDP terms of 8.3%, as shown in Graph 1. This increase was mainly due to the significant increase in public expenditure, especially those capitals that mark this year with a higher growth in relation to total public expenditures and relative to GDP with an annual increase of 124% compared to the previous year.



GRAPH 1. Economic growth and Public Expenditure.

Source: Author's own calculation based on data provided by the Ministry of Finance of Republic of Kosovo

Therefore, the reasoning of this study is to analyze the relationship between public expenditure and economic growth in Kosovo. In other words, did the economic growth cause public expenditure (Wagner's view), or was it the opposite – did public expenditure cause economic growth (Keynesian's view)? This study examined whether the economic effects expressed either in Wagner's or Keynes's views have any effect in Kosovo with the application of the Johansen co-integrated test and the Granger causality test. In addition, the outcomes obtained from the analysis will assist policymakers in finding appropriate ways for stimulating economic growth in Kosovo.

Besides the introduction, the study proceeds as follows: in Section 2, we describe the empirical evidence of the relationship between public expenditure and economic growth. In Section 3, demonstrate the dataset and methodology used during the empirical analysis, while in Section 4, the empirical results are presented. Finally, in Section 5, we present the main concluding remarks and recommendations.

2. Literature Review

The relationship between public expenditure and economic growth has been examined by many researchers. However, there is no consistent evidence that there's any unidirectional causality between public expenditure and economic growth. Therefore, researchers that aim to determine the direction of causality for the existence of validity of Keynesian or Wagner views constantly give mixed results. To find the direction of causality, Garba & Abdullahi (2013) examined the relationship between public expenditure and economic growth in Nigeria. They applied the Johansen co-integration approach and the Granger causality test using time series aggregate data for a sample of 39 years, over the period of 1970–2008. The result revealed that public expenditure and economic growth are co-integrated in the long run. Furthermore, the results of the Granger causality test indicate bidirectional causality running from public expenditure to economic growth and, in turn, from economic growth to public expenditure instead of being unidirectional.

Komain & Brahmašre (2007) examined the relationship between public expenditure and economic growth on Thailand's economy. The authors found no co-integration between the variables in the long-run. They also conducted an analysis using the Granger causality test, their results showing that a causal relationship runs from public expenditure to the economic growth, and they confirmed the legitimacy of the Keynesian view. Abizadeh & Gray (1985) investigated the relationship between public expenditure and economic growth for 55 countries in their cross-country study. The scholars found a unidirectional causality from public expenditure to income for the richer country. However, they found no support on the Wagner view for the poorest countries. Satish & Rahul (2010), using a dataset on India's economy over the period of 1950-51 to 2007-08, conclude that Wagner's hypothesis supports these two periods of the economy. Dogan

& Tang (2011), in their attempts to determine the direction of causality between public expenditure and economic growth for Indonesia, Malaysia, Philippines, Singapore, and Thailand, by using Johansen co-integrated methods and the Granger causality test, found that causality runs from public expenditure to national income only by Philippine's data and indicated that the Keynesian view is supported by this country.

Abubakar (2016) examined the association between public expenditure and economic growth in Nigeria by employing the Johansen co-integration test and the Vector Error Correction Model (VECM) to examine the short-run and long-run impacts of components from public spending on economic growth. Findings of this study show a mixed impact of components of public expenditure on GDP in short run and long run, while Cosimo (2011) analyzed the relationship between public expenditure and economic growth for Italy. A Granger causality test was employed for the period of 1960–2008, and the results for causality flow came out in line with the Keynesian hypothesis for public investment in Italy. Similarly, Liu, Hsu & Younis (2008) conducted a study for the US with a time span ranging from 1947 to 2002 and employed the Granger causality test to examine relationship between GDP and government expenditure; the scholars came up with results that causality runs from total government expenditure to real GDP in favor of the Keynesian law for the US.

Salih (2012) used co-integration, causality and an error correction model (ECM) for Sudan, using time series data for the period 1970–2010. The author found that real GDP growth per capita has positively impacted the growth of general public expenditure as part of the GDP. The result indicates that data for the period considered support Wagner's hypothesis in Sudan's economy. On the contrary, the Keynesian theory is not supported by data from Sudan.

Dritsakis & Adamopoulos (2004) analyzed the relationship between public expenditure and economic growth for the Greek economy. A co-integrated methodology and a causality test were used to examine the period of 1960–2001. Variables were co-integrated in the long run, but in the short-run, the causality test results validated the Keynesian hypothesis.

In their study, Danladi, Akomolafe, Olarinde & Anyadiegwu (2015) analyzed and modeled the relationship between aggregate spending and economic growth for Nigeria for the period of 1980–2013. In this paper, they used the autoregressive distributed lag model (ARDL) to examine the relationship between independent variables and dependent variables. In their paper, they also implemented the Granger causality test to determine the direction of causality between aggregate spending and economic growth. The results of the study showed that aggregate expenditures positively impact and are statistically significant for economic growth. In addition, this study endorses the Keynesian theory of state intervention in the economy.

Wang, Peculea, & Xu, (2016) have applied the ARDL (Auto Regression Distributed Lag) approach and the Bounds Test, based on Unrestricted Error Correction Model, to test five different representations of Wagner's Law using annual data for the period 1991–2014 for Romania. Empirical results show that there inheres a long-term relationship between public spending and economic growth, which is unidirectional from economic growth to government expenditure. This means that Keynes's Law does not hold for Rumania. However, Tudorel, Stelian, Andreea, Claudiu & Bogdan (2010) test five different representations of Wagner's Law on Romanian data covering a period from 1985 to 2000. The results of these five representations of Wagner's law are confirmed for aggregate budgetary expenditures. Similarly, Pappas & Stoian (2016) employed the Johansen co-integration test and the Granger causality test to examine relationship between economic growths and government expenditure. They used a dataset from 1995 to 2015 for Romania. The results of the study reports that this relation is consistent with Wagner's Law in the long term, but in the short term, they show an absence of Wagner's Law in three out of five versions.

Furthermore, Ansari, Gordon & Akuamoah (1997) employed the Granger causality and Holmes-Hutton statistical procedures to test the relationship between economic growth and public expenditure for three African countries: Ghana, Kenya and South Africa. The result suggests that the Keynesian hypothesis of public expenditure causing economic growth is not supported by data for these African countries.

3. Data and Methodology

The aim of this study is to examine the relationship between public expenditure and economic growth in Kosovo. The methodology started with unit root testing and variables were found to be integrated of the same order one $I(1)$. Then, we applied the Johansen co-integration test to examine the long-run relationship between the variables, which showed that the variables are co-integrated. Followed by the co-integration procedure, we applied the Granger causality test to determine the direction of the relationship between the variables.

The data under examination comprise public expenditure (G), Gross Domestic Product and three other components of GDP: Foreign Direct Investment (FDI), Export (EXP) and Total Budget Revenue ($TRtax$). The variables used in this study come from three major sources: the International Monetary Fund, the Central Bank database, the Ministry of Finance and the Statistical Office of Kosovo. To test the long-run relationship between the variables using time series data, it needs more observation. Therefore, due to a lack of annual data, the variables used in this analysis are quarterly time series data spanning from 2004–2016, and there are 48 observations available for this study. Nevertheless, for this study, we used the econometric software application Eviews7.

4. Findings and Discussion

4.1. Test of the Stationarity

In order to pit Keynes's and Wagner's views against one another, we should test the stationary of time Seri data. For every variable on the time series, data is necessary to accomplish the unit root test, because if the series have a unit root, they will then mislead the results. At this point, we can utilize different subsequent tests: the Philips-Perron test (PP) (Philips & Perron 1988), the Augmented Dickey-Fuller test (ADF), the Zivot-Andrews unit root test (Zivot & Andrews 1992). In this study, we apply the ADF test, as it is widely used in literature. The purpose of the Augmented Dickey-Fuller (ADF) test is to acquire the white noise errors.

To check the presence of unit root test, we based our next procedure on the following regression (Dickey & Fuller 1981).

$$\Delta Y_t = a_0 + a_1 y_{t-1} + \sum_{j=1}^n a_2 i \Delta y_{t-1} + \mu_t$$

This regression is based on the t-ratio, where Δ is the first difference operator of the series y and n is lag, a_0 is constant, a_1 and a_2 are parameters and μ is a white noise error residual (Dickey & Fuller 1979).

According to the ADF test, we usually use null and alternative hypotheses:

H_0 : $a_1 = a_2 = 0$ (Series contains a unit root, nonstationary);

H_1 : $a_1 = a_2 \neq 0$ (Series is stationary).

If we would not reject the null hypothesis, then we could conclude that the series have a unit root and are nonstationary. Wherefore if the null hypothesis is rejected for the above regression, it can then be concluded that the series do not have a unit root and are stationary (mean and variance is constant). The results obtained from the ADF test are reported in Table 1.

TABLE 1: Augmented Dickey-Fuller (ADF) test results.

Variables	Level	P-value	First difference	P-value	Order
GDP	-0.107	0.941	-40.455	0.000	I(1)
G	-1.374	0.584	-25.772	0.000	I(1)
Trtax	-1.049	0.725	-9.700	0.000	I(1)
FDI	-0.802	0.808	-5.574	0.000	I(1)
Exp	-2.523	0.117	-7.827	0.000	I(1)

Source: calculated by the author.

Table 4 shows the results of the ADF test for time series. We first test for a stationary of the variables in the level form. The results show that all the series (G , FDI , EXP , $Trtax$) are not stationary in the level form. Then, we applied the ADF test to transform

all of these series in first differences. Afterward, for each series, the results suggest that the null hypothesis can be rejected in the first difference $\sim I(1)$. We can thus conclude that each series are stationary and integrated of order one $I(1)$. Since all series are integrated of order one $I(1)$, then we proceed to investigate the long-run and short-run relationships between variables using the Johansen co-integrated regression and the Granger causality test.

4.2. Johansen's Cointegration Test

Empirical literature provides two different methods for testing co-integration; the Engel-Granger (Engle & Granger 1987) methodology and the Johansen (Johansen 1991) methodology. Co-integration discloses the long-run relationship between the variables. We use the Johansen approach in this study, because comparing to the Autoregressive Distributive Lag (ARDL), which can be applied even in different orders, the Johansen co-integrated test should only be applied when the variables are integrated in one order. However, all variables in this study are integrated in one order. The Johansen methodology provides all variables to be endogenous and makes it available to determine the relationship between the estimated variables (Paparas & Stoian 2016). There are two statistics generated by this approach: the maximum Eigenvalue and trace statistics. These are given below:

$$\theta_{trace} = -n \sum_{i=r+1}^m \ln(1 - \hat{\theta}_i)$$

And

$$\theta_{max} = -n \ln(1 - \widehat{\theta}_{r+1})$$

The results obtained from these statistics are reported in Tables 2 and 3:

TABLE 2. The Johansen co-integration test results.

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized No. Of CE(s)	Eigenvalue	Trace Statistics	0.05 Critical Value	Prob.**
None*	0.788660	115.2562	69.81889	0.0000
At most 1*	0.440655	51.53042	47.85613	0.0217
At most 2	0.339061	27.70988	29.79707	0.0854
At most 3	0.209342	10.73206	15.49471	0.2285
At most 4	0.026511	1.101600	3.841466	0.2939

Source: calculated by the author.

Note: ** MacKinnon-Haug-Michelis (1999). The trace test indicates that there is cointegration between variables.

TABLE 3. The Johansen co-integration test results.

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized No. Of CE(s)	Eigenvalue	Trace Statistics	0.05 Critical Value	Prob.**
None*	0.788660	63.72579	33.87687	0.0000
At most 1	0.440655	23.82054	2785434	0.0217
At most 2	0.339061	16.97782	21.13162	0.1731
At most 3	0.209342	9.630461	14.26460	0.2373
At most 4	0.026511	1.101600	3.841466	0.2939

Source: calculated by the author.

Note: ** MacKinnon-Haug-Michelis (1999). The trace test indicates there is cointegrated between variables.

The results that are reported in Tables 2 and 3 indicate that there are one and two co-integrated vectors between variables. The results suggest that a null-hypothesis of no co-integration between variables, which are being considered and between public expenditure and economic growth in particular, should be rejected. Put differently, there exists a long-run relationship between the variables, or public expenditure and economic growth are moving together in the long run. Both the Trace and Maximum Eigenvalue tests confirm this conclusion. This co-integrated test does not tell the direction of a relationship between variables. The next step test sheds light on the causality between variables.

4.2.1. The Long-Run Equation

The normalized estimated long-run equation is given below in Table 4:

TABLE 4. A co-integration of the normalized equation.

Cointegration coefficient normalized on growth				
GDPD	GD	TrtaxD	FDID	EXPD
1.0000	-4.451096	0.280249	-0.762991	0.218714
	(0.41531)	(0.55408)	(0.12642)	(1.27594)

Source: calculated by the author.

The normalized co-integration results shown in the table above indicate that two variables – Total Budget Revenue (*Trtax*) and Export (*EXP*) – have negative impact on economic growth (*GDP*), while the two other variables *G* and *FDI*, which represent the indicator for public expenditure and Foreign Direct Investment, cause a positive impact on growth, but all of the variables on the model are insignificant. However, public expenditure so far has not emphasized the growth process of the Kosovan economy, but we can note from results that public expenditure is a very important factor for Kosovo's

economic and social development and can be used as a policy instrument for stimulating the economic growth of Kosovo. These findings are consistent with a substantial amount of other studies (Kormendi & Meguire 1986; Ram 1986; Alexious 2007; Aschauer A. 1990; Chen & Lee 2005; Kocherlakota & Yi 1994; Wu 1994; Anyadiegwu, Danladi, Akomolafe, Olarinde, & L. 2015; Cheng & Lai 1997; Ifeanyi, Nworji & Obiwuru 2012).

4.3. The Granger Causality Test

In order to analyze the direction of causality between the two variables, we use the Granger causality test. The Granger causality test assumes that only time series data can expound the information needed for a relationship between variables (Gujarati 2003). The Granger causality test is based on a standard F-test, which pursues to determine if any development in one variable causes development in another variable (Paparas & Stoian 2016). Therefore, this test is applied to determine the existence of the Keynesian versus Wagner hypothesis. The test includes an estimation of the following two equations:

$$Y_t = \delta_1 + \sum_{j=1}^p \beta_{i1} Y_{t-j} + \sum_{j=1}^q \alpha_{i1} X_{t-j} + \varepsilon_t \quad (1)$$

$$X_t = \delta_2 + \sum_{j=1}^i \beta_{i2} X_{t-j} + \sum_{j=1}^m \alpha_{i2} Y_{t-j} + \mu_t \quad (2)$$

	Unidirectional		Bidirectional	No causality
Causality	$Y_t \rightarrow X_t$	$X_t \rightarrow Y_t$	$Y_t \leftrightarrow X_t$	$Y_t \leftrightarrow X_t$
Testing Hypothesis H_0	$H_0: a_{i1} = 0 \forall_i$	$H_0: a_{i2} = 0 \forall_i$	$H_0: a_{i1} = 0 \forall_i$ $H_0: a_{i2} = 0 \forall_i$	$H_0: a_{i1} = 0 \forall_i$ $H_0: a_{i2} = 0 \forall_i$

In those equations, β_{ij} 's and α_{ij} 's are parameters, ε_t and μ_t are residual terms, whereas δ_{ij} 's are constant terms. The hypotheses raised by the first equations above are:

$$H_0: a_{11} = a_{12} = \dots \dots \dots a_{q1} = 0$$

$H_1: a_{ij}$'s are jointly significant

If we rejected hypothesis H_0 , we can conclude, in the Gangery sense, that Y_t causes X_t ($Y_t \rightarrow X_t$). The relationship is also unidirectional. All the while, the hypotheses raised below from the second equation above are:

$$H_0: \beta_{11} = \beta_{22} = \dots \dots \dots \beta_{m1} = 0$$

$H_1: \beta_{ij}$'s are jointly significant

If we rejected hypothesis H_0 , we can conclude, in the Gangery sense, that X_t causes Y_t ($X_t \rightarrow Y_t$). The relationship is also unidirectional. If each of the equations given above rejected the hypothesis H_0 , then we can conclude that a bidirectional relationship exists

between X_t and Y_t ($Y_t \leftrightarrow X_t$). The results obtained from the Granger causality tests are summarized in Table 5.

TABLE 5. Results of the Granger causality tests.

Variables	F-statistics	P-value	Decision	Causality
<i>GD does not Granger Cause GDPD</i>	6.67	0.004	Reject	<i>Unidirectional</i>
<i>GDPD does not Granger Cause GD</i>	1.24	0.304	Do not reject	$G_t \rightarrow GDP_t$
<i>Trtax does not Granger Cause GDPD</i>	1.63	0.209	Do not reject	<i>Unidirectional</i>
<i>GDPD does not Granger Cause TrtaxD</i>	4.12	0.024	Reject	$GDP_t \rightarrow Trtax_t$
<i>FDID does not Granger Cause GDPD</i>	6.23	0.004	Reject	<i>Bidirectional</i>
<i>GDPD does not Granger Cause FDID</i>	3.65	0.036	Reject	$GDP_t \leftrightarrow FDI_t$
<i>EXP01D does not Granger Cause GDPD</i>	4.16	0.023	Reject	<i>Bidirectional</i>
<i>GDPD does not Granger Cause EXP01D</i>	5.15	0.010	Reject	$GDP_t \leftrightarrow EXP_t$
<i>TrtaxD does not Granger Cause GD</i>	8.34	0.001	Reject	<i>Bidirectional</i>
<i>GD does not Granger Cause TrtaxD</i>	2.92	0.066	Reject	$G_t \leftrightarrow Trtax_t$
<i>FDID does not Granger Cause G D</i>	5.96	0.005	Reject	<i>Bidirectional</i>
<i>G D does not Granger Cause FDID</i>	8.83	0.000	Reject	$G_t \leftrightarrow FDI_t$
<i>EXP01D does not Granger Cause TrtaxD</i>	7.090	0.002	Reject	<i>Unidirectional</i>
<i>TrtaxD does not Granger Cause EXPo1D</i>	13.15	5.E-05	Do not reject	$EXP_t \rightarrow Trtax_t$
<i>EXP01D does not Granger Cause FDID</i>	1.55	0.22	Do not reject	<i>Unidirectional</i>
<i>FDID does not Granger Cause EXPo1D</i>	8.13	0.001	Reject	$FDI_t \rightarrow EXP_t$

Source: calculated by the author.

The analysis presented in Table 4 shows the direction of causality between macroeconomic variables. The Granger causality test results revealed that there is unidirectional causality between public expenditure and economic growth. Causality is running from public expenditure to economic growth, $G_t \rightarrow GDP_t$ and so it provides support for the validity of the Keynesian view. Therefore, trends suggest, with reference to the period under review, that the role of the state and especially public expenditure are very important factors for the economic growth of Kosovo.

The other results also found that there is a long-run relationship between total budget revenue and public expenditure. However, our results, based on Granger causality tests, show that there is bidirectional causality between these two variables: $G_t \leftrightarrow Trtax_t$. Thus, this does not support the validity of Barro's (1979) spend-tax hypothesis. Therefore, the government should spend carefully by avoiding unnecessary spending. The results of our evidence are also parallel to the earlier findings of Chen (2016), Naved, Shahid & Somia (2011) and Ghartey (2010).

On the other hand, results also provide evidence to support the relationship between export and economic growth hypothesis. The causality between these two variables has a bidirectional causality of $GDP_t \leftrightarrow EXP_t$ for Kosovo. Moreover, these two variables are co-integrated in the long run. The results of our evidence are also parallel to the

earlier findings of Narayan, Nielsen & Smyth (2008), Acaravci & Osturk (2012) and Afzal (2006).

Furthermore, there is evidence that the causality between FDI and GDP is a bidirectional $GDP_t \leftrightarrow FDI_t$, and that the relationship between FDI and Export are unidirectional; so, the study found that FDI does Granger cause real Export ($FDI_t \rightarrow EXP_t$). Thus, we may conclude that FDI is a very important factor for driving economic growth, both directly and indirectly; the results of our evidence are also parallel to the earlier findings of Acaravci & Osturk (2012).

5. Conclusion

The aim of this study was to analyze the relationship between economic growth and public expenditure for Kosovo. The study also aims is to test the views of Keynes and Wagner and to put them in opposition. The quarterly time series data spanning from 2004–2016 is used. Augmented-Dickey Fuller (ADF) test results show that all series are found stationary at first difference. To test the long-run relationship between public expenditure and economic growth, the Johansen co-integration methodology was employed. The results of the test show that there is a long-run relationship between variables, whereas based on the Granger causality test, the economy of Kosovo showed evidence that economic growth is being caused by public expenditure. This supports the Keynesian hypothesis regarding the role of government expenditure as an exogenous factor of economic growth. This is since economic growth in Kosovo is based on public expenditure as an important economic factor. However, we find no evidence that economic growth causes any increased public expenditure. In other words, Wagner's proposal that economic growth causes public expenditure is not supported by data on Kosovo.

The outcomes from this research are very important for policymakers in Kosovo. However, the Keynesian theory is important only to countries at their earliest phases of development. Kosovo happens to be a transitional economy; thus, we recommend that the government should focus on public expenditure as an exogenous factor to improve the environment for economic reform and infrastructure as an important ground for the enhancement of the private sector.

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