

Dynamic Causal Relationship between Government Expenditure and Government Revenue in Sri Lanka

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Introduction

An opposite fiscal policy is a vital ingredient for sustainable economic development. Sri Lanka is often suffering from a persistent fiscal deficit one that has been increasing in an exponential way in nominal as well as real values.

Many scholars have drawn their attention to comprehend the budgetary movements and the causal relationship between government revenue and government expenditure since, it is essential to address unsustainable fiscal deficit and evaluate the government's role in the management of resources. Moreover, such evaluation clears the way for sound fiscal policy formulation and implementation to achieve rapid and sustainable socio-economic growth (Obioma & Ozughalu, 2010). Persistent behavior of budget deficit raises many unanswered questions in existing literature. The direction of causality between the government revenue and government expenditure is still a puzzle.

Theoretical literature explains the causal relationship between government revenue and government expenditure by considering four hypotheses. The tax-and-spend hypothesis, proposed by Friedman (1978) explains that raising taxes will simply lead to more spending. The spend-and-tax hypothesis, proposed by Peacock and Wiseman

(1961, 1979) postulates that government expenditure causes government revenue. The third school, fiscal synchronization hypothesis argues that government may take revenue and expenditure decisions simultaneously, because the two variables interact interdependently (Meltzer & Richard, 1981; Musgrave, 1966). Finally, fiscal neutrality school or institutional separation hypothesis which was introduced by Baghestani and McNown (1994) is based on the perspective that government revenue and expenditure decisions are independent of one another.

Using bounds testing approach for Sri Lanka Narayan (2005) identified government revenue Granger cause government spending in the short run. In the long run, government spending Granger causes government revenue. Using Engle Granger Co-integration approach and Error Correction Model (ECM) for Sri Lankan Ravinthirakumaran (2011) found bidirectional causality between revenue and expenditure which supported the fiscal synchronization hypothesis. According to the existing literature, it proves that only limited numbers of studies have concentrated on this issue in Sri Lanka and no one has extended their analysis to identify the short run and long run dynamics and budgetary movement. By considering these research gaps, this study investigates the direction of causality between government expenditure and government revenue for Sri Lanka.

Objectives

The main objective of this study is to examine the direction of causality between government expenditure and government revenue both in the short run and in the long run.

Methodology

The study uses annual data of government revenue (GREV), Government expenditure (GEXP) and the GDP deflator of Sri Lanka for the period of 1960 to 2013 and was collected from Central Bank annual reports. GREV and GRXP were transformed as real GEXP, real GREV using the GDP deflator. In order to stabilize variability of the series, this study transformed all the variables to natural logs. (LRGEXP=log of real government expenditure and LRGREV=log of real government revenue).

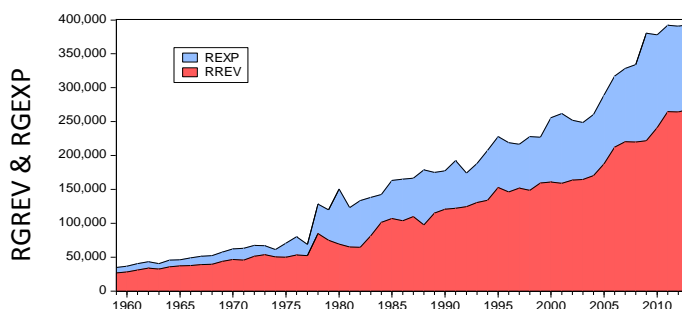
The ADF, KPSS and ERS unit root tests are employed to investigate the order of integration. VECM is used to investigate the long run relationship between variables. Furthermore, three types of Granger causality tests, namely: i) Pairwise Granger causality test, ii) VAR Granger causality/Block Exogeneity and iii) VEC Granger causality/Block Exogeneity, have utilized to identify the direction of causality.

Results

According to the preliminary analysis using the line graph (Figure 1) clearly show that the two variables are upward trending and seem non-stationary. Further, it shows that RGEXP is increasing faster than the RGREV.

All three unit root tests confirmed that all variables are non-stationary at level and integrated at order I(1). Johansen co-integration test of the trace statistic (27.68) and Max Eigen value statistic (18.97) shows that there is one co-integrating relationship between these variables. This confirmed that to use VECM. Results of VECM shows, coefficients of speed of adjustment (-0.24) is negative and significant at 10%, which implies there is a long run equilibrium between LRGEXP and LRGREV.

Figure 1: Line graph of RGEXP and RGREV



Source: Central Bank Annual Reports (2014)
Year

Table 1 shows the results of Granger causality. RGEXP granger causes RGREV in short run and in the long run which is consistent with findings of Peacock and Wiseman (1961, 1979).

Table 1: Results of Granger Causality Test (Two Lags)

Null hypothesis	Probability values		
	Pairwise Granger causality	VAR Granger Causality	VEC Granger Causality
DRGREV \xrightarrow{no} DRGEXP	0.2237	0.2130	0.6321
DRGEXP \xrightarrow{no} DRGREV	0.0357**	0.0278**	0.4773
DLRGR \xrightarrow{no} DLRGEXP	0.1676	0.1563	0.4107
DLRGE \xrightarrow{no} DLRGREV	0.0907*	0.0799*	0.0215**

Note: ** 5% significance and * 10% Significance

Impulse response analysis show that shocks to LRGEXP will increase LRGREV slowly from second year while shocks to LRGREV do not affect LRGEXP. This also confirms that causal relationship runs from government expenditure to government revenue.

Conclusion

The study mainly focuses on investigating the causal and dynamic relationship between government expenditure and government revenue in Sri Lanka for the period of 1960-2013. The results supports spending-revenue hypothesis both in the short run and long run. Narayan (2005) also has identified this type of causal relationship in long but failed to prove spending-revenue hypothesis in short run. Moreover, the study finds that in the long run there is a positive association between government expenditure and government revenue. Results do not support Friedman's hypothesis that increased revenue cause increased expenditures. So, Sri Lanka should try to reduce recurrent expenditure and increase development and investment expenditure which will generate income in the future. Moreover, the government's tax policy should focus the right group of people and try to improve non-tax revenue such as profits and dividends, interest income in order to have a stable fiscal deficit.

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