The impact of budget deficit on private investment in Sri Lanka

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Abstract

There has been considerable controversy about the possible crowding-out effect of government expenditure and budget deficits on private sector investments. Economists argue that the expansionary fiscal policy may increase the market interest rates and lower the investment of an economy which creates a crowding out effect on the national income. But, it is also interpreted as the increase in the budget deficit will encourage business opportunities and will increase in private investment. This study aims to identify the impact of government budget deficit on private investments in the Sri Lankan context and solve the theoretical debate in the literature. Multiple linear regression model is employed using time series data from 1990 to 2015. The results show that there is a positive relationship between budget deficit and private investment in Sri Lanka. Accordingly, this study concludes that the absence of the crowding-out effect in Sri Lanka.

Keywords: *Budget deficit, crowding out effect, private investment, Sri Lanka.*

1. Introduction

The primary objective of any government is to achieve the macroeconomic goals such as sustainable economic growth, low and acceptable level of unemployment, internal stability, and external stability. Governments try to achieve these goals by using fiscal policy, monetary policy and trade policies. Fiscal policy examines the government spending and revenue to monitor and influence the economy through reducing unemployment rates, stabilizing business cycles, controlling inflation and interest rates.

When the government spending exceeds its revenue, it is said to be a budget deficit (Arjomand, Emami & Salimi, 2016). This deficit can be financed by issuing currencies, running down foreign exchange reserves, borrowing from abroad, and borrowing from domestic as well. The deficit financing methods directly affect the resource allocation and macroeconomic activities. Issuing domestic debt instruments is one of the forms of financing the budget deficit. When the government borrowing increases, the available financial facilities

to the private sector will decrease and it will put pressure on interest rates (Apere, 2014). As a result of this fiscal deficit, national savings will drastically reduce and thus the domestic investment. The fiscal deficit creates macroeconomic imbalances and an expansionary fiscal policy naturally leads to a contraction of the private sector which reflects in a decrease in private investment and consumption (Mankiw, 2009).
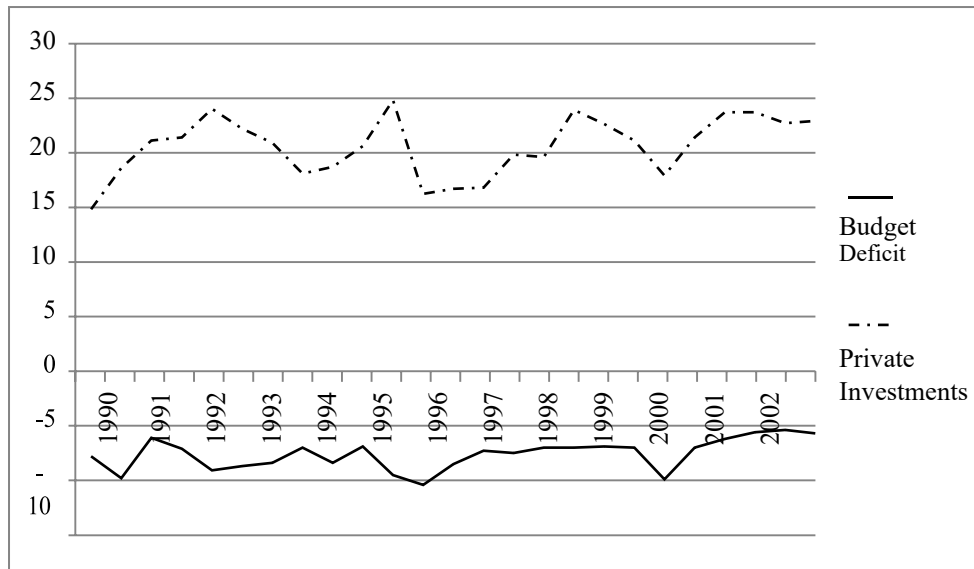

Figure 1 Budget deficit and private investment in Sri Lanka

Source: Author's calculation based on Central Bank of Sri Lanka (CBSL) data (2015).

Figure 1 shows the trend of government budget deficit and private investment from 1990 to 2015 in Sri Lanka. Private investment in Sri Lanka has a growing trend during the period of 1990 to 2000. In the year 2000, it reached a peak of 24 percent of GDP. After that, there is a moderate decline between 2001 and 2005. Private Investment has experienced a little fluctuation by the year 2010 then it has maintained the same level up to 2015.

According to CBSL (2015), there was a considerable deviation in fiscal deficit during the past few years. It has increased up to 7.4 percent in 2015 from 5.4 percent in the year 2014 as a percent of GDP. This is basically due to the declining trend of government revenue. Total government revenue has declined from 12 percent to 13.1 percent of the GDP. Furthermore, it has been mentioned that the increase in fiscal deficit had been affected by the unfavorable weather condition prevailed that period. Therefore, the annual report of CBSL (2015) has been mentioned that the government introduced tax reforms and broadened the tax base. Tax exemptions were rearranged and try to administer recurrent and capital expenditure. The government was trying to reduce fiscal deficit to 4.4 percent and government debt to 72.0 percent of GDP maintaining a considerable amount of economic growth in 2015. During that period government borrowing from the banking sector to finance the deficit was increased dramatically (CBSL, 2015).

To finance the budgetary deficit government is using public debt by minimizing risk and possible cost. CBSL tries to maintain an optimal mix of domestic and foreign debt and to

reduce the maturity differences. For that purpose, treasury bonds worth Rs.295.8 billion have been issued by the government in 2015 (CBSL, 2015).

Private investment in an integral part of the development of an economy and it is affected by budget deficit directly. But there is a controversial issue related to private investment and fiscal deficit. Some researchers have argued that when budget deficit increases, it will cover up through borrowing funds from externally and internally as well. So this increase in government expenditure which is fulfilled by borrowing from capital markets (Analizi, 2011) creates an interest hike and it may increase borrowers'' cost of capital. Ultimately this will hinder private sector investments. Theoretically, this phenomenon has been explained as the "Crowding out effect". It is when the government demands funds from the financial market to cover the budget deficit; the increase in the market interest rate creates a situation in which the private sector reduces borrowings as the cost of barrowings is high (Mankiw, 2009).

But another perspective relating to this is that if the government spending increases to invest in better infrastructure facilities or health and education, it stimulates private investment (Thilanka & Sri Ranjith, 2018). Also, the Keynsian approach suggests that if the government increases its expenditures to increase capital investment such as infrastructure facilities or education it will have an upward pressure on private investment (Thilanka & Sri Ranjith, 2018). Since that it suggests a positive correlation between private investment and fiscal deficit. Hence we can identify two basic approaches relating to the budget deficit and private investment; The Keynesian approach emphasizes the crowding-in effect of government spending and the classical and neoclassical approach which emphasizes the crowding-out effect of government spending.

Table 1
Theoretical debate in summary

Negative relationship between budget deficit and private investments	Positive relationship between budget deficit and private investments	No relationship between budget deficit and private investments
Carrasco (1998)	Apare (2014)	Alani (2006)
Huntley (2014)	Ahmed, Miller, and Miller (1999)	Raju and Mukherjee (2010)
Abirami and Panda (2015)		Doç and Kustepeli (2005)

Since there is a conflict with the theory as two explanations are available to explain the that suggests higher budget deficit perhaps would increase the private investment or decrease private investment, the main objective of this research is to test whether there is any significant relationship between budget deficit and private investment in Sri Lanka. Further, it tries to investigate which kind of relationship exists between budget deficit and private investment. The rest of this paper is structured as follows. Section 2 presents the review of the literature on private investments and budget deficit. The methodology is presented in Section 3 while analysis and findings are presented in Section 4. The conclusion section is presented in Section 5.

2. Review of literature

The relationship between public debt and private investment has been discussed with different perspectives under different schools. According to the Keynesian view, a crowding-in effect takes place in private investment as a result of government spending. Under the Neoclassical view a budget deficit creates upward pressure on interest rates and thereby crowds out private investment (Thilanka & Sri Ranjith, 2018). The Ricardian Equivalence view argued that there will be no crowding out effect that takes place in private investment as a result of increasing government debt (Carrasco, 1998). Further, it says the increase in loan demand by the government will offset with the higher savings as the public will encourage to invest more in government bonds. Therefore, the interest rate remains unchanged which leads to an unchanged private investment (Arjomand, 2016).

Several researches have been conducted relating to this area and some previous arguments have been revived. Most of time this argument has been described in the context of the standard IS-LM framework. According to this framework, the IS curve represents the locus of points in which the real sector of the economy while the LM curve represents a similar locus point for which demand for money equals to supply of money. Though IS-LM model has distinct limitations, it acts as a useful device in highlighting the issues in the crowding out controversy (Mankiw, 2009).

Crowding out generally refers to the economic effects of expansionary fiscal policy. If an increase in government expenditure, financed either by increasing tax revenue or obtaining domestic debt by issuing debt instruments to the general public, it will fail to stimulate total economic activity. In such a situation, the private sector is said to be crowded out by government actions.

Keynes (1936) suggested that government spending does not crowd out private investment in his book "The General Theory of Employment, Interest, and Money". But he has provided some opposite arguments also in his book. Throughout his theory, Keynes has much concerned about expectations and confidence. Though there was a small budget deficit in those days, that government spending could adversely affect the confidence of the private sector and this led to reduction in the private investments.

When examining the empirical literature, several studies have investigated the relationship between fiscal policy and private investment. Carrasco (1998) in the study of "Crowding-Out Government Spending" used empirical analysis by using aggregate investment, budget deficit, inflation, the rate of corporate profits and index of selling prices and retail trade as the variables. He also found that the Neo-Classical view, an increase in budget deficit will crowd out private investment and negatively affect living standards in the USA (Carrasco, 1998).

A study done by Huntley (2014) has analyzed the long-term effect of changes in federal fiscal policy including the effects of changes in federal budget deficit on aggregate output and income. The results conclude that for each dollar's increase in the federal deficit, the effect on investment ranges from a decrease of 15 cents to a decrease of 50 cents, with a central estimate of a decrease of 33 cents.

Traum and Yang (2015) explored whether government debt crowds out private investment in the United State economy using an estimated New Keynesian model with detailed fiscal

specifications and accounting for monetary and fiscal policy interaction. Structural DSGE approach has been employed for the study. The results explain that the crowding out effect in the short run depends on the policy shocks triggering debt expansions. Further, higher debt can crowd investments for cutting capital tax rates or increasing government investment. Most fiscal instruments are used to respond to debt systematically and when the debt to out-put ratio rises, the federal government mainly decreases its consumption and increases income taxes. But there is a controversial issue that no systematic relationship between the real interest rate and investment. At longer, discretionary financing is important for the negative investment response to debt.

A study by Alani (2006) has taken into consideration, the relationship between public sector investment and private sector investment by using government expenditure financed by the government bonds in Japan by using the data for the period of 1998 to 2006. The results of this study emphasize that these variables do not affect to the interest rates because they are insensitive to government expenditures and depend on the international financial markets due to the globalization and integration among financial markets and further it has been mentioned that there is a positive relationship between public sector investment and private sector investment and also fiscal deficit which financed by bonds, crowding out is not inevitable.

Raju and Mukherjee (2010) used a VAR model in analyzing the long-run relationship between the fiscal deficits, the crowding out of private investment, and net exports for the Indian economy by using data for the period of 1980 to 2009. In this study, they have used unit root test and cointegration techniques that allow for endogenously determined structural breaks. The finding of this study supports neither crowding out nor crowding in the hypothesis between government spending and private investment. Further, it represents Ricardian Equivalence theory on public debt, it does not matter whether a government finances its spending with debt or tax increase, the effect on the total level of demand in an economy will be the same.

A recent study done by Abirami and Panda (2015) examined the effect of fiscal deficit on private sector investment in India by using the time series data for the period 1981 to 2012. ADF test has been used in testing the stationarity of the variables and Johanson maximum likelihood approach is applied to verify the co-integration or to identify the long term equilibrium relationship between private investment and other variables. VEC method is employed to identify the short-run dynamics. The variables are GDP, fiscal deficit, private investment and interest rate. All the variables were collected from the Reserve Bank India and IMF Database, as well as all variables, have been converted into natural log. The results of the study reveal that fiscal deficit crowds out private sector investment in India in the long run though the speed of adjustment of private investment to equilibrium is low. Further, it has been mentioned that to encourage private investment, fiscal prudence of the government is important and further reducing the budget deficit by lowering government expenditure will help to promote private sector investment.

Fayed (2012) examined the relationship between government borrowing and private credit in Egypt. A cointegration approach is used to investigate the relationship. The results conclude that government borrowing from domestic banks leads to a more than one to one crowding out of private credit. But the government borrowing from the banking sector is not the only

reason for crowding out effect. The increase of banks' holdings of treasury bills and other securities reflect the banks' willingness to invest in low risk but high return investments. Further, it explains that there is a statistically significant negative effect of government borrowing on private credit. So, when government borrowing from the banking sector increases it causes to decrease in credit to the private sector and reduces private investment as well.

Shetta and Kamaly (2014) observed a growing budget deficit and the heavy reliance on debt financing from the banking sector in Egypt. This study has used the VAR model by using quarterly data for four decades and the ADF test in testing unit root problem. Quarterly data for the period of 1970 to 2009 have been used in the analysis. This article has suggested that government borrowing crowds out private investment through its dampening effect on private credit and further effect of a government borrowing shock is contractionary with regard to the overall banking sector credit (Shetta & Kamaly, 2014). The crowding out was found to be more than one to one effect. Further, the study suggests that lending to the government has a positive impact on banks' profitability. When the government issues more debt instruments to finance fiscal deficit, banks try to have less risky but high return instruments.

A study by Doç and Kustepeli (2005) in Turkey examined the effectiveness of fiscal spending on private investment in the Keynesian model. The Recardian Equilence theorem argues that increases in deficit financing would leave the private investment unchanged. Johansen cointegration test results verify both Keynesian and Neoclassical views in Turkey. It means increases in government spending are found to crowd in private investment while increases in government deficit are found to crowd it out. The variables are private investment, real interest rate, government spending and GDP for the period of 1967 to 2003.

Njuru (2012) has used semi-annual time series data from the period of 1964 to 2010 to investigate the relationship between fiscal policy implications on the private investment in Kenya. It has regressed private investment against output, income tax, VAT, excise duty, import tax, government expenditure, budget deficit and domestic debt. This study has used OLS method in regressing the model and ADF and Philips Perron tests in determining stationarity. The validity of the model has been tested by using white-noise error term. Johansen co-integration test and Granjer two-step methods are the ways of testing long run co-integration and VAR model for error correction. This study has found that there is a direct impact of fiscal policy on private investment in Kenya. But further he says that Government debt, Taxes and Government expenditure can both positively or negatively affect the private investment in the short run and long run as well.

Apere (2014) has investigated the impact of public debt on private investment by using time series data from 1981 to 2012 in Nigeria. He has regressed private investment on external debt, domestic debt, private consumption expenditure using the instrumental variable technique. Data for this study were drawn from the central bank of Nigeria and annual reports. This research has found that domestic debt has a linear positive relationship to the private investment and external debt has U- shaped effect while private consumption expenditure negatively effects on the private investment (Apere, 2014).

A study done by Ahmed et al. (1999) used to examine the effects of government expenditure on private investment using fixed and random effect methods by using the effects of tax and

debt financing expenditure for the full sample and also for subsamples of developing and developed countries. Government expenditure, educational expenditure, health expenditure to GDP, social security expenditure to GDP, transportation expenditure to GDP and investment have been used as the variables for the regression analysis. The results suggest that all other government expenditure crowd out investment while only transport and communication expenditure, crowds in investment in developing countries. Further the openness has a significantly positive effect on investment in developing countries only. For developed countries, openness does not significantly effect on investment. The transport and communication expenditure has a crowding in effect only in the developing countries.

According to Thilanka and Sri Ranjith (2018), a positive relationship has been identified between public debt and private investment and it confirms the crowding-in effect of public debt on private investment in the Sri Lankan context. Further, the findings are justified using the Keynesian theory and as the study emphasized the positive relationship between public debt and private investment can be a result of promoting private investments with the utilization of public debt on development projects.

The positive relationship between private investment and budget deficit in Sri Lanka is further supported by Priyadarshanee and Dayaratna-Banda (2013). Accordingly, private investment has increased as a result of fiscal expansions which validate the absence of the crowding-out effect. The study was done by Cooray (2019) also confirms the absence of a crowding-out effect with public borrowing through domestic sources in Sri Lanka. The study further suggests that the government can rely on domestic sources in financing without limiting private investment in the economy.

Kodithuwakku, Jayawardana, Jayawardhana, Muhandiramge and Dulani (2016) came up with a contradictory finding that budget deficit does not affect on the private investment based on their study on factors affecting private investment in Sri Lanka. Though budget deficit is positively associated with private investments in Sri Lanka, there is no significant impact from budget deficit to private investment in Sri Lanka.

To conclude the literature analysis, it has been found that there can be a positive as well as a negative relationship between budget deficit and private investment while some studies have found that there is no significant impact from budget deficit on private investment.

3. Methodology

The primary objective of this study is to investigate the relationship between budget deficit and private investment in Sri Lanka. In achieving this purpose, variables have been carefully selected through the literature survey. Accordingly, the identified variables are budget deficit, private investment, inflation rate, real interest rate, external debt, household consumption expenditure and government consumption expenditure.

3.1 Conceptual framework

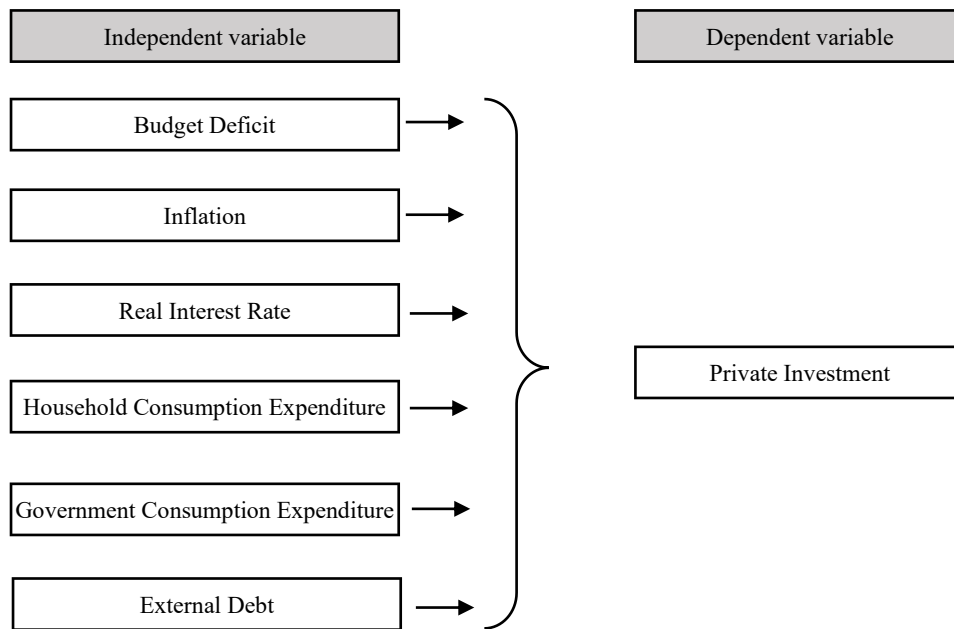The conceptual framework of the study is presented in Figure 1.

Figure 1 Conceptual framework

3.2 Data collection

Secondary data collected from Word Bank statistics were used for the variables in identifying the relationship between private investment and budget deficit. The study period of this research is from 1990 to 2015. Further, annual time series data were used for the analysis.

Private Investment (PI): This research mainly examines the impact of fiscal deficit on private investment. Hence, the dependent variable of this study is Private investment in Sri Lanka. Private investment can be measured by using different measurements. Private investment is the capital accumulated by the private sectors for productive purposes (Njuru, 2012). It can be calculated by deducting government investment (GI) from the gross fixed capital formation (GFCF). In this study, gross fixed capital formation by the private sector is considered as the private investment in Sri Lanka. Hence, private investment is proxied by, "PI = GFCF – GI". Change in private investment is indicated by the percentage change in gross fixed capital formation by the private sector. More specifically, gross fixed capital formation by the private sector has been used as a percentage of GDP.

Budget Deficit (BD): If the government expenditure exceeds government revenue, the gap is called the fiscal deficit (Njuru, 2012). Government expenditure consists of both recurrent and capital expenditures. This study has used the budget deficit as a percentage of the GDP to indicate fiscal deficit (Njuru, 2012).

Real Interest Rate (INT): There is a direct relationship between interest rate and private investment (Hemachandra, 2009). Three-month Treasury Bill rate was used to indicate the real interest rate.

Inflation (INF): The Colombo Consumer Price Index (CCPI) has been identified as a suitable measurement to indicate the inflation rate (Issn, 2013). Hence, the percentage change in CCPI (base year 2002) would proxy the inflation.

Household Consumption Expenditure (HCE): Household consumption expenditure consists of expenditure incurred by the resident household on goods and services that are used for the satisfaction of needs or wants (OECD, 2017). Household consumption expenditure as a percentage of the GDP is used to measure the household consumption expenditure (Apere, 2014).

Government Consumption Expenditure (GCE): In this study GCE as a percentage of GDP has been used as the indicate government consumption expenditure (Mahmoudzadeh, 2013).

External Debt (ED): External debt as a percentage of the GDP is used to capture external debt in this study (Apere, 2014).

3.3 Regression model

A multiple regression analysis has been employed to estimate the results. The model of the study is given in Equation 01.

$$PI = f(BD, INT, INF, HCE, GCE, ED) \rightarrow \text{Equation 01}$$

$$PI_{it} = \beta_0 + \beta_1 BD_{it} + \beta_2 INT_{it} + \beta_3 INF_{it} + \beta_4 HCE_{it} + \beta_5 GCE_{it} + \beta_6 ED_{it}$$

Where,

PI_{it} = Private investment as a percentage of GDP

BD_{it} = Budget deficit as a percentage of GDP

INT_{it} = Three month treasury bill

INF_{it} = Colombo consumer price index

HCE_{it} = Household consumption expenditure as a percentage of GDP

GCE_{it} = Government consumption expenditure as a percentage GDP

Ed_{it} = External debt as a percentage of GDP

β_0 = Constant

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ and β_6 are the coefficients

4.   Analysis and findings

The analysis is done using trend analysis and statistical analysis. Trend analysis is discussed in 4.1 while the statistical analysis is given in 4.2.
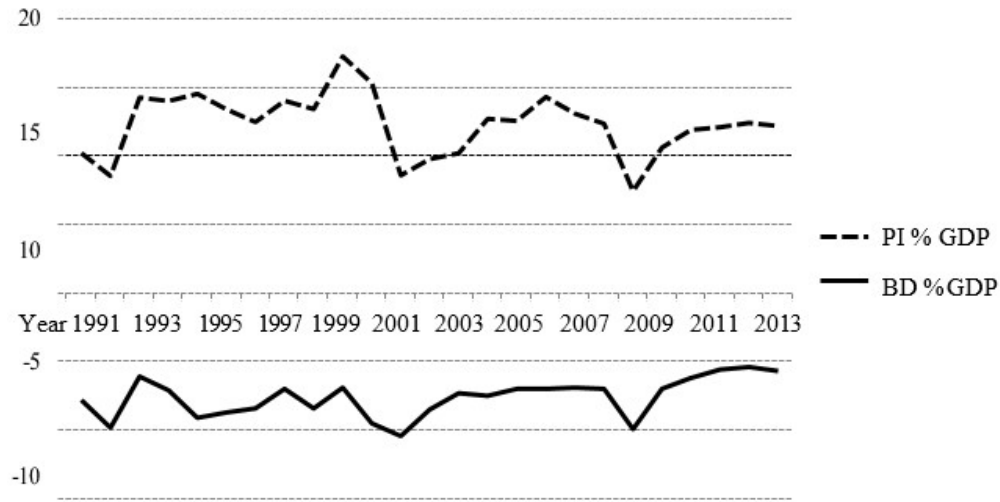
4.1 Trend analysis

Figure 3 Private investment and budget deficit

Source: Compiled by author by using World Bank statistics.

Figure 3 shows the relationship between private investment and budget deficit. It represents a slight similar trend between the two variables. In 2000 and 2009 there are huge fiscal deficit and private investment also had less amounts in those years following budget deficit.

4.2 Analysis

Since this study is entirely based on the time series data stationarity was tested using ADF test. The test results are presented in Table 2. According to the results, the data set is free from the unit root problem suggesting it is stationary at the identified levels. The budget deficit, interest rate and inflation were stationary at the level. Private investment, household consumption expenditure and government consumption expenditure became stationary at first difference.

Table 2
Observed results of the augmented dickey fuller test

Variables	Stationary level	t-Statistic	Probability
PI	1st Deference	-4.0324	0.0019**
BD	Level	-3.1017	0.0399**
INT	Level	-5.3582	0.0002*
INF	Level	-4.3053	0.0027**
ED	Level	-5.0971	0.0005*
HCE	1st Deference	-4.0489	0.0068**
GCE	1st Deference	-5.3136	0.0003*

*Note: *, **, *** denotes rejection of the hypothesis at 10%, 5% and 1%*
Source: Compiled by author by using World Bank statistics.

Table 3
Diagnostic and specification tests for co-integration

Test Objective	Statistical Test	Test Statistic	Probability
Heteroskedasticity	White-Heteroskedasticity Test	7.4202	0.2837
Serial Correlation	Breuch-Grodfry Serial Correlation LM Test	4.9981	0.0822
Stability	Ramsey RESET Test	2.0902	0.0686
Normality	Histogram-Normality Test (Jarque-Bera)	1.2077	0.5467

Source: Compiled by author by using World Bank statistics.

The test results of diagnostic and specification tests are summarized in Table 3. According to the White-Heteroskedasticity test results, it suggests that there is no heteroskedasticity is the selected data set. Breuch-Grodfry serial correlation LM test was employed to test serial correlation. based on the test results, there is no serial correlation exists in the data set. In testing the normality of the study, Histogram-Normality Test has been used. The results conclude that the fitted model is normally distributed at 5 percent significance level. Based on the test results of the Ramsey RESET Test, we can conclude that the estimated model is stable at 5 percent significance level.

Table 4
Correlation matrix

	PI	BD	INT	INF	HCE	GCE	ED
PI	1	0.4007	0.2861	-0.2892	-0.313	-0.1429	-0.3699
BD	0.4007	1	-0.1059	-0.0992	0.3902	-0.287	-0.3433
INT	0.2861	-0.1059	1	-0.5399	0.1506	-0.345	0.289
INF	-0.2892	-0.0992	-0.5399	1	0.379	0.2528	0.1219
HCE	-0.313	-0.3902	0.1506	0.379	1	-0.3353	0.7595
GCE	-0.1429	-0.287	-0.345	0.2528	0.3353	1	-0.3826
ED	-0.3699	-0.3433	0.289	0.1219	0.7595	-0.3826	1

According to the correlation matrix presented in Table 4, Household consumption expenditure as a percent of GDP and external debt as a percent of GDP shows a strong correlation whereas the other independent variables show comparatively a weak correlation with each other independent variables. Accordingly, we can conclude that the model is free from the multicollinearity problem.

The results of the estimated equation are presented in Table 5. According to the final estimated results, the regression line can be given as follows.

PI = 7.045144 + 1.085639BD - 0.233303INF

The overall suitability of the model is given by F-statistic. Accordingly, the estimated model is fitted at 5 percent level of significance. The R-square value of the model is 0.52 which means 52 percent of the variation in the dependent variable is explained by the variation of the independent variables captured in the model. Therefore, the model can be considered as a suitable model.

Table 5
Results of the determinant equation

Variables	Coefficient	Probability
BD	1.085693	0.0055**
INF	-0.233303	0.0470**
INT	-0.083592	0.4653
ED	0.080362	0.1387
D(HCE)	0.216694	0.4149
D(GCE)	0.198393	0.4226
C	7.045144	0.0894
Adjusted R^2	0.52	
Prob (F-Statistics)	0.046	

Note: *, **, *** denotes rejection of the hypothesis at 10%, 5% and 1%
Source: Compiled by author by using World Bank statistics.

Based on the model results, only two dependent variables are significant while other independent variables are not significant. The significant variables are the budget deficit and inflation where both variables are significant at 5 percent level of significance. Hence, we can conclude that there is a significant positive relationship between private investment and budget deficit while there is a negative significant relationship between private investment and inflation.

The budget deficit has a positive relationship with private investments which means, a change in the budget deficit will change the private investment in the same direction. Accordingly, this concludes the absence of the crowding-out effect in the Sri Lankan context. Ahmed et al. (1999), Doç and Kustepeli (2005), Alani (2006) and Apere (2014) have observed the same empirical findings through their studies. Priyadarshanee and Dayaratna-Banda (2013), Thilanka and Sri Ranjith (2018) and Cooray (2019) also confirmed this finding through their studies under the Sri Lankan context.

Inflation and private investment have a negative significant relationship which suggests that a change in inflation would change private investments in the opposite direction in Sri Lanka. An increase in the inflation rate of Sri Lanka will withdraw the investors and their investment while a decrease in inflation will encourage private investments within Sri Lanka.

5. Conclusion

This study aims to examine the effect of budget deficit on private investment in Sri Lanka to empirically investigate and resolve the theoretical debate of crowing-out and crowding-in effect of the budget deficit. The ordinary least square estimates were employed in deriving the model using data of 26 years from 1990 to 2015. In addition to the private investments, the model captured inflation rate, real interest rate, external debt, household consumption expenditure and government consumption expenditure taken as control variables. The model results suggest that the budget deficit impact on private investments positively whereas the only inflation rate (control variable) has negatively affected private investments. Accordingly, the expansion in the budget deficit will boost private investments. Hence, the study concludes the absence of a crowding-out effect in Sri Lanka.

References

Abirami, R. M., & Panda, P. K. (2015). Fiscal deficit, private sector investment and crowding out in India. 4(4), 88–94.

Ahmed, H., Miller, S. M., & Miller, S. M. (1999), Crowding-out and crowding-in effects of the components of government expenditure, *Economics Working Paper,* (July).

Alani, E. M. A. A. (2001). Crowding-out and crowding-in effects of government bonds market on private sector (Japanese Case Study), *Institute of Developing Economies,* Discussion Paper No. 74.

Analizi, K. (2011). Crowding out effect of government spending on private investments in turkey: A cointegration analysis. *Journal of the Institute of Social Sciences*, (8), 11-20.

Apere, T. O. (2014). The impact of public debt on private investment in Nigeria: Evidence from a nonlinear Model. *International Journal of Research in Social Sciences*, 4(2), 130-138.

Arjomand, M., Emami, K., & Salimi, F. (2016). Growth and productivity; the role of budget deficit in the MENA selected countries. *Procedia Economics and Finance*, 36 (), 345-352.

Carrasco, M. (1998). Crowding-out and government spending. *University Avenue Undergraduate Journal of Economics*, 40(4), 1-9.

CBSL. (2015). *Annual Report.* Central Bank of Sri Lanka.

Cooray, L. A. N. (2019). Crowding-out effect of public borrowing in Sri Lanka. *Journal of Economics and Business*, 2(3), 827-842.

Doç, Y., & Kustepeli, Y. (2005). Effectiveness of fiscal spending: Crowding out and/ or crowding in? Economic dynamics and policies. *Yönetim ve Ekonomi*, 12/1 (2005), 185-192.

Fayed, M. E. (2012). Crowding out effect of public borrowing: The case of Egypt. 1-14.

Hemachandra, W. (2009). Interest rate as a policy instrument – recent experience of Sri Lanka. *Staff Studies*, 39 (1 &2), 15-36.

Huntley, J. (2014). The long-run effects of federal budget deficits on national saving and private domestic investment working paper 2014-02. Working Papers 45140, Congressional budget office.

Issn, M. (2013). Fiscal deficits and private investment: Econometric evidence from Nigeria, Ph. D, CNA, HCIB Department of Banking and Finance, Anambra State University, 3(2), 1-18.

Keynes, J.M. (1936). The general theory of employment, interest and money. New York: Harcourt, Brace and Co.

Kodithuwakku, D., Jayawardana, Y., Jayawardhana, M., Muhandiramge, K., & Dulani, K. (2016). Study on the factors affecting private investments in Sri Lanka. *Journal of Social Statistics*, 3(2), 22-34.

Mahmoudzadeh, M. (2013). Fiscal spending and crowding out effect: A comparison between developed and developing countries. *Institutions and Economies*, 5(1), 31–40.

Mankiw, N. (2009). Macroeconomics. New York: Worth Publishers.

Njuru, S. G. (2012). Effects of fiscal policy on private investment in Kenya, Investment Guide.

Priyadarshanee, A., & Dayaratna-Banda, O. (2013). The budget deficit and financial crowding out: evidence from Sri Lanka. *Sri Lanka Journal of Economic Research*, 1(1), 3-28.

Raju, S., & Mukherjee, J. (2010). Fiscal deficit, crowding out and the sustainability of economic growth the case of the Indian economy, *Ifri Centre for Asian Studies.*

Shetta, S., & Kamaly, A. (2014). Does the budget deficit crowd - out private credit from the Banking Sector? The case of Egypt. *Topics in Middle Eastern and African Economies*, 16(2), 251–279.

Thilanka, H., & Sri Ranjith, J. (2018). The impact of public debt on private investment: Sri Lankan experience. I*nternational Journal of Business and Social Research*, 8(8), 1-10.

Traum, N., & Yang, S.S. (2015). When does government debt crowd out investment? *Journal of Applied Econometrics*, 30(1), 24-45.