“Budget deficits, investment and economic growth: a panel cointegration approach”

AUTHORS	Goitsemodimo Abel Molocwa Yohane Khamfula Priviledge Cheteni https://orcid.org/0000-0002-1301-9486 http://www.researcherid.com/rid/L-5364-2013

ARTICLE INFO	Goitsemodimo Abel Molocwa, Yohane Khamfula and Priviledge Cheteni (2018). Budget deficits, investment and economic growth: a panel cointegration approach. *Investment Management and Financial Innovations*, *15*(3), 182-189. doi:10.21511/imfi.15(3).2018.15
DOI	http://dx.doi.org/10.21511/imfi.15(3).2018.15
RELEASED ON	Tuesday, 04 September 2018
RECEIVED ON	Sunday, 04 February 2018
ACCEPTED ON	Tuesday, 17 April 2018

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JOURNAL	"Investment Management and Financial Innovations"
ISSN PRINT	1810-4967
ISSN ONLINE	1812-9358
PUBLISHER	LLC “Consulting Publishing Company “Business Perspectives”
FOUNDER	LLC “Consulting Publishing Company “Business Perspectives”

NUMBER OF REFERENCES	NUMBER OF FIGURES	NUMBER OF TABLES
43	1	5

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BUSINESS PERSPECTIVES

LLC "CPC "Business Perspectives"
Hryhorii Skovoroda lane, 10, Sumy, 40022, Ukraine

www.businessperspectives.org

Goitsemodimo Abel Molocwa (South Africa), **Yohane Khamfula** (South Africa), **Priviledge Cheteni** (South Africa)

BUDGET DEFICITS, INVESTMENT AND ECONOMIC GROWTH: A PANEL COINTEGRATION APPROACH

Abstract

This paper discusses the political economy of budget deficits among the BRICS nations between 1997 and 2016 using a panel cointegration approach to determine the long-run relationship between economic growth, budget deficits, inflation and gross investment. The results of the study show a long-run equilibrium association among economic growth and the selected variables. Furthermore, there is a positive relationship between budget deficit, inflation, and economic growth, for the period under study for BRICS countries. Lastly, the results support the view that there is bi-directional linkage from budget deficit to economic growth and vice versa.

Keywords budget, BRICS, economic growth, panel analysis

JEL Classification E22, F21, C35, C36

Received on: 4th of February, 2018
Accepted on: 17th of April, 2018

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Goitsemodimo Abel Molocwa, M.Com. (Economics), School of Economic and Decision Science, North West University, South Africa.

Yohane Khamfula, Professor, School of Economic and Decision Science, North West University, South Africa.

Priviledge Cheteni, Ph.D. Candidate, Agricultural Economics and Extension, University of Fort Hare, South Africa.

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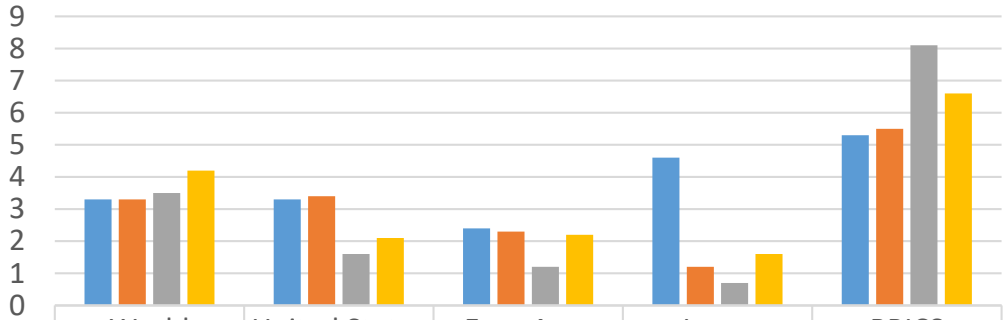
INTRODUCTION

The BRICS was initially established in 2003 and it consists of Brazil, Russia, India, China and South Africa. These nations are believed to be in a similar platform in terms of radical economic growth. The main aims of BRICS' bloc are to collaborate among the affiliate nations for the growth, offer assistance financially, and support numerous infrastructure developments (Wilson & Purushothaman, 2003). In the mid-July 2016, during the Brazil summit, the BRICS bloc announced that it has now positioned itself to fiscal task globally by initiating establishments planned to challenge the European and the United States (U.S.) dominated International Monetary Fund (IMF) and the World Bank. The BRICS bank was allocated with an opening capital of $100 billion, which BRICS members in need of funds could get assistance from; which could be assessed entirely by the United Nations members (Shahrokhi et al., 2017).

All the bloc five nations are members of G-20. The bloc members altogether have a joint USD 16.04 trillion nominal GDP, approximately 20 percent of the entire global GDP, and have a projected USD four trillion in collective foreign reserves (IMF, 2016).

Figure 1 displays BRICS past performance with reference to other states and republics. The BRICS bloc rate of growth is steadily higher than other blocs, suggesting that the BRICS alliance has a feasible track of attaining the bloc capabilities. During the period from 2001



	World	United States	Euro Area	Japan	BRICS
1981–1990	3.3	3.3	2.4	4.6	5.3
1991–2000	3.3	3.4	2.3	1.2	5.5
2001–2010	3.5	1.6	1.2	0.7	8.1
2011–2020	4.2	2.1	2.2	1.6	6.6

Figure 1. Average GDP (actual and predictions)

to 2010, the real statistics validate an annual average rate progress of around 4.6 percent to 8.1 percent higher compared to the global average, also 6.5 percent higher than the United State (U.S) growth average. According to 2011 to 2020 forecasts, a 2.4 percent growth average, which is higher than the global average is expected given an optimistic view point for the bloc.

The aim of this study was to investigate the impact of a budget deficit on economic growth and investment in the BRICS countries. Consequently, filling the literature gap on the political economy of budget deficits, and to assist government policy makers in formulating correct policies to reduce budget deficits in BRICS countries.

1. EMPIRICAL LITERATURE

According to Dao and Bui (2016), the fiscal policy is considered to be a strong tool for the government economic boost, particularly in periods of recession, by way of motive, the government constantly faces budget deficit, which consequently is quiet contentious. Woo (2003) scrutinizes an economic large dataset on socio-political and institutional variables in a panel of 57 developed and emerging nations between 1970 and 1990. The researchers established that depth of finance, inequality of income, homicides, size of cabinet, and control of power in decisions regarding budgetary are vital and strong in determining public deficits. The tax-smoothing model of fiscal deficits claims that budget shortfalls will appear once output is provisionally small or once spending by the government is provisionally high (Woo, 2003). According to Seater (1993), the debt of the government is a main reason for recessions, joblessness, trade deficits, price increases, high rates of interest, and almost any further unsatisfactory feature of economic performance.

Dao (2013), Dao and Bui (2016) examined the effect of budget deficit on growth in the Vietnamese economy. An Autoregressive Distributed Lag (ARDL) was employed to analyze the quarterly data from 2003 to 2015, and it was found that there is a long-run relationship between macro variables under study. Moreover, the budget deficit does not affect economic growth. While, useful expenditure has a substantial positive influence. Nevertheless, non-productive expenditure and consumer price index (inflation) together had a negative influence on the budget deficit. Consequently, all decisions by the government with regard to spending are to be taken under precautions (Dao & Bui, 2016). Keho (2016) examines the influence of budget deficit on private consumption in the West African Economic and

Monetary Union (WAEMU) on seven member countries, namely Benin, Burkina Faso, Côte d'Ivoire, Mali, Niger, Senegal and Togo. The author employed the pooled mean group estimation method covering the period from 1970 to 2013 on the yearly data. The findings of the study reveal that per capita GDP and budget deficit have long-term positive impact on household, while the rate of inflation is negative for private consumption. This indicates that private consumption is not accountable for any crowding-out effect a budget deficit may take on extended periods of total demand and growth of an economy in WAEMU. Consequently, limiting budget deficits is expensive for the growth of WAEMU countries (Keho, 2016).

Ahmad (2013) also examined the relationship between Gross Domestic Product and budget deficit of Pakistan. Time series data for the period from 1971 to 2007 were used to verify the connection among economic growth and budget deficit in Pakistan. The outcomes of Granger causality test demonstrated that there is dual-directional causality in succession from budget deficit to GDP and GDP to budget deficit. The Ordinary Least Squares (OLS) results illustrated that there was a positive relationship between GDP and budget deficit in Pakistan. In this manner, the results follow the Ricardian method of neutral connection between economic growth and budget deficit of the country. In getting back the economy to its equilibrium, budget deficit has no role (Ahmad, 2013). While, the findings by Thirunavukkarasu and Achchuthan (2013) show no substantial influence of budget deficit on the growth of the economy. Similarly, no substantial connection between economic growth and budget deficit in the Sri Lankan economy.

A study led by Braun (2006) claimed that Argentina fiscal institutions set the platform for a serious mutual pool problem in federal fiscal relationships that lead to an orderly deficit prejudice. In incidence of common pool problems, a number of countries approved numerical fiscal rules that restrict expenditures, debt and deficits. Nevertheless, owing to the Argentina malfunction institutions, the numerical fiscal rules lack the required credibility to impact actual behavior, without providing a solution to the deficit prejudice. This prejudice is slightly weakened by the element that budget institutions do whatever pleases it, meaning that politicians could negotiate with important players in the Argentine economy for a degree of fiscal solvency.

According to Gale and Samwick (2014), the rate of tax may inspire people to work, invest, and save, but then again if the tax slices are not funded by instantaneous spending cuts, they will probably end up increasing federal budget deficit, which will decrease national saving and increase interest rates in the long term. The net influence on growth is unclear, however, several appraisals suggest it is either minor or contrary. Base-broadening methods could remove the tax rate cuts effect on the budget deficits, however, in the same period, they also decrease the influence the supply of labour, saving, and investment and therefore decrease the direct influence on growth. The findings indicate that not all changes in tax will take the similar effect on growth. Restructuring that increases incentives, decreases the current grants, evades windfall achievements, and evades deficit funding resolves in additional favorable impact on the lasting magnitude of the economy, however, it may also generate trade-offs among equity and efficiency (Gale & Samwick, 2014).

Kurantin (2017) demonstrates that a budget is not predictable to proceed on a viable growth track under present socio-economic and political (governance) policies; the budget is predicted to upsurge more rapidly than the Gross Domestic Product (GDP) of the country. The sample employed in this study was based on panel data sets between 1994 and 2014. Outcomes attained from the examination pointed to a negative influence of sustained budget deficit on the processes of economic growth and development (Kurantin, 2017).

Huynh (2007) used a data over the period from 1990 to 2006 from Vietnam and was capable of displaying that continuous budget deficit have an adverse influence on the GDP growth rate of a country. Illustrating the opinions as adopted by neoclassical economists, the researcher resolved that such negative influence on GDP growth rate crowded out the private sector investment.

Finally, findings from Musyoka (2013) indicated that budget deficit adversely affects a country's

economic growth, as per findings from the regression and correlation analysis that there was an adverse connection among economic growth and budget deficit. The study also concludes that a country's gross investment positively influences its economic growth. The study further discovered that inflation rate increase, rate of exchange and interest rate adversely impact economic growth of a country. Inflation rate increases discourage investment, as it decreases the currency purchasing power, consequently decreasing the country's economic growth.

2. MODEL SPECIFICATION

The empirical literature on budget deficits identifies a number of determinants that lead to deficits, the study analyzes the impact of budget deficits on economic growth by modifying the model used by Kurantin (2017) as follows:

$$cLn(GDP) = \beta_0 + \beta_1 \ln(INFL) + \\ + \beta_2 \ln(EXCH) + \beta_3 \ln(RIR) + \\ + \ln \beta_4 (BD) + \ln \beta_5 (GI) + u. \quad (1)$$

$$GDP_t = \alpha_0 + \alpha_1 \log BD_t + \\ + \alpha_2 \log INFL_t + \alpha_3 \log GI_t + \varepsilon_t. \quad (2)$$

Equation 1 represents the model used by Kurantin (2017), while equation 2 represents the modified model of this study. The model excludes the real interest rate (RIR) and real exchange rate $(EXCH)$ variables. Where GDP is the economic growth (the country's general welfare), BD is the budget deficits, $INFL$ is the inflation rate, GI is the gross investment, α_0 and β_0 are constant, α_1, α_2, α_3 and β_1, $\beta_2 \ldots \beta_5$ are coefficients for each variable and ε_t and u are error terms. The study assumes that the GDP is positively related to other variables. Yet, it is hypothetically probable that GDP is adversely connected to the budget deficits if the positive pressures for greater spending by the government are accompanied by the rising tax income owing to upper economic growth. Inflation could distress fiscal deficits over different channels. Rising inflation could also increase fiscal deficits through upper nominal interest payments.

3. DATA

This study used annual panel data for the period from 1997 to 2016 obtained from World Development Indicators (WDI), and the International Monetary Fund (IMF). The study employed the following variables: Gross Domestic Product, budget deficits, inflation rate and real effective exchange rate.

The study engaged entirely seven test statistics to arrive to a decision if there was cointegration among variables by observing the majority test statistics that established the presence of cointegration. As soon as it was established that cointegration existed between the variables, the subsequent stage was to decide the extended parameters. For that end, a Fully Modified Ordinary Least Square (FMOLS) and Dynamic Ordinary Least Square (DOLS) were adopted. Kao and Chiang (2001) claimed that these two estimators correct the standard pooled OLS for serial correlation and endogeneity of regressors.

4. FINDINGS OF THE STUDY

A presentation of the study findings is done in this section. The section starts with the presentation of panel unit root tests and model results will follow.

4.1. Panel unit root analysis

Table 1. Panel unit root results: Levin, Lin, and Chu test

Levin, Lin, and Chu test	Levels		First difference	
	Individual effect	Individual effect & trend	Individual effect	Individual effect & trend
GDP	–2.138 (0.016)**	–3.418 (0.000)***	–7.285 (0.000)***	–7.119 (0.000)***
BD	–0.929 (0.176)	–1.143 (0.126)	–5.908 (0.000)***	–5.226 (0.000)***
INFL	0.411 (0.340)	–0.276 (0.391)	–7.167 (0.000)***	–6.506 (0.000)***
GI	–1.344 (0.089)*	0.438 (0.669)	–3.312 (0.000)	–2.480 (0.006)

Note: *10% statistically significant, **5% statistically significant, **1% statistically significant.

Table 2. Panel unit root results: Im, Pesaran, and Shin test

Im, Pesaran, and Shin	Levels		First difference	
	Individual effect	Individual effect & trend	Individual effect	Individual effect & trend
GDP	–1.505 (0.066)*	–0.911 (0.181)	–6.481 (0.000)***	–6.244 (0.000)***
BD	–1.410 (0.079)*	–0.449 (0.326)	–3.993 (0.000)***	–2.669 (0.003)***
INFL	–1.701 (0.044)**	–1.551 (0.060)*	–7.719 (0.000)***	–7.153 (0.000)***
GI	–0.535 (0.296)	–0.389 (0.348)	–3.849 (0.000)***	–2.510 (0.006)***

Note: *10% statistically significant, **5% statistically significant, ***1% statistically significant.

To test the existence of unit root in panel data, Table 1 presents the results of LLC test and Table 2 of IPS unit root test. The equation type is based on individual effect and also individual effect and trend. Tables 1 and 2 indicate that both common and individual tests, variables are non-stationary at levels, except GDP. They become stationary at first difference, and this means that they are I(1).

4.2. Panel cointegration results

The results of the Pedroni panel cointegration test are presented in Table 3. The table is divided into two rows, where the first row is within dimension and it consists of four columns which are panel t-statistics, corresponding panel probability, weighted statistics and its corresponding probability, whereas the second row is between dimension statistics, that is consists of two columns, the first column is the panel t-statistics and last column is panel probability.

Table 3 shows that the panel ADF-statistic and PP-statistic are all significant at 5 percent level under the first dimension. However, in the second category, the Group rho-statistic is not significant, although the Group PP-statistic and ADF are all significant at 5 percent level. The findings imply that there is a long-run panel cointegration between the tested variable (out of 11 tests statistics, 6 confirmed existence of cointegration).

Consequently, the assumptions of using a Fully Modified Ordinary Least Squares (FMOLS) and the Dynamic Ordinary Least Squares (DOLS) to estimate the long-run impact of variables were fulfilled. Table 4 presents the FMOLS and DOLS results, where the dependent variable is economic growth. Table 4 is divided into 5 columns, first column is independent variables, second column is the FMOLS coefficients, third column is the corresponding probabilities, and columns 4 and 5 are the DOLS and corresponding probabilities, respectively.

The results of FMOLS reveal a positive relationship between economic growth and budget deficits. Therefore, it can be said that a 1 percent increase in budget deficits will lead to 0.838 percent increase in economic growth. The results also show that inflation has a positive effect on economic growth. Therefore, a 1 percent increase in inflation will lead to 0.129 percent increase in economic growth, the coefficient are positive. On the other hand, the DOLS results show a positive relationship between economic growth, budget deficits, inflation and gross investment, but only the coefficient of budget deficits is statistically significant at 5 percent. If the budget deficit is increased by 1 percent, 0.838 percent increase is expected on economic growth.

The Granger causality results in Table 5 reveal that there is causality from budget deficits to economic growth and from economic growth to budget deficits. This implies that there is bi-directional causality running at 5 percent and 1 percent significant level, respectively, between budget deficits and economic growth. Likewise, causality is also recorded is also running from gross investment to economic growth.

Tabel 3. Pedroni panel cointegration results

Within dimension statistics	Panel t-statistics	Panel probability	Weighted statistics	Panel probability
Panel v-statistic	–0.536	0.704	–1.168	0.878
Panel rho-statistic	–0.946	0.172	–0.673	0.250
Panel PP-statistic	–4.342	0.000***	–3.840	0.000***
Panel ADF-statistic	–2.822	0.002***	–3.135	0.000***
Between dimension statistics	Panel t-statistics	Panel probability	–	–
Group rho-statistic	0.030	0.512		
Group PP-statistic	–5.076	0.000***	–	–
Group ADF-statistic	–2.304	0.010**		

Note: *10% statistically significant, **5% statistically significant, ***1% statistically significant.

Table 4. FMOLS and DOLS results

Dependent variable: GDP

Independent variable	FMOLS coefficients	Probability	DOLS coefficients	Probability
BD	0.838	0.000***	0.814	0.000***
INFL	0.129	0.000***	0.105	0.505
GI	–0.049	0.329	0.005	0.939

Note: //*// 10% statistically significant, //**// 5% statistically significant, //***// 1% statistically significant.

Table 5. Panel Granger causality results

Null hypothesis	F-statistics	Probability value
BD does not Granger cause GDP GDP does not Granger cause BD	3.360 5.251	0.039** 0.007***
INFL does not Granger cause GDP GDP does not Granger cause INFL	1.181 4.939	0.311 0.009***
GI does not Granger cause GDP GDP does not Granger cause GI	6.593 1.327	0.002*** 0.270
INFL does not Granger cause BD BD does not Granger cause INFL	3.480 2.338	0.035** 0.103
GI does not Granger cause BD BD does not Granger cause GI	0.770 0.635	0.466 0.532
GI does not Granger cause INFL INFL does not Granger cause GI	3.704 0.621	0.028** 0.539

Note: *10% statistically significant, **5% statistically significant, ***1% statistically significant.

CONCLUSION

The study investigated the impact of budget deficits on economic growth and investment in the BRICS countries. The panel cointegration results confirm the existence of a long-run relationship between economic growth and the selected variables. The results of FMOLS show that there is a positive relationship between budget deficit, inflation and economic growth, while DOLS results indicate a positive impact of budget deficits on economic growth for the period under study for BRICS countries as confirmed by Ahmad (2013). Lastly, the results of Granger causality show that there is bi-directional running from budget deficit to economic growth and from economic growth to budget deficit.

The major implication from this study is that government needs to reduce budgets deficits in order to influence economic activity. However, while there is a disagreement on the effect of budget deficit on economic growth, many countries, especially BRICS countries, have a low budget deficit and positive economic growth. Similarly, in certain instances, there is a need for governments to increase budget deficits in order to influence economic activity. Therefore, the impact of budget deficits on economic growth can be said to be bi-directional depending on circumstances prevalent at a certain period.

REFERENCES

1. Abuaf, N., & Jorion, P. (1990). Purchasing power parity in the long run. *The Journal of Finance, 45*(1), 157-174. Retrieved from https://econpapers.repec.org/article/blajfinan/v_3a45_3ay_3a1990_3ai_3a1_3ap_3a157-74.htm
2. Ahmad, N. (2013). The role of budget deficit in the economic growth of Pakistan. *Global Journal of Management and Business Research, 13*(5).
3. Alesina, A. (2000). The political economy of the budget surplus in the United States. *The Journal of Economic Perspectives, 14*(3), 3-19. Retrieved from https://www.aeaweb.org/articles?id=10.1257/jep.14.3.3
4. Alesina, A., & Perotti, R. (1995). The political economy of budget deficits. *Staff Papers, 42*(1), 1-31. Retrieved from https://econpapers.repec.org/article/palimfstp/v_3a42_3ay_3a1995_3ai_3a1_3ap_3a1-31.htm
5. Alesina, A., & Tabellini, G. (1989). External debt, capital flight and political risk. *Journal of international Economics, 27*(3-4), 199-220.

6. Baltagi, B. (2008). *Econometric analysis of panel data*. John Wiley & Sons.
7. Barro, R. J. (1974). Are government bonds net wealth? *Journal of political economy, 82*(6), 1095-1117. Retrieved from https://dash.harvard.edu/handle/1/3451399
8. Braun, M. (2006). The political economy of debt in Argentina, or why history repeats itself. *Centro de implementación de políticas publicas para la equidad y el crecimiento,* 1-42.
9. Breitung, J. (2001). The local power of some unit root tests for panel data. In *Nonstationary panels, panel cointegration, and dynamic panels* (pp. 161-177). Emerald Group Publishing Limited.
10. Buchanan, J. M., & Wagner, R. E. (1977). *Democracy in deficit*. Acad. Press.
11. Choi, I. (2001). Unit root tests for panel data. *Journal of international money and Finance, 20*(2), 249-272.
12. Cukierman, A., & Meltzer, A. H. (1989). A political theory of government debt and deficits in a neo-Ricardian framework. *The American Economic Review,* 713-732.
13. Dao, B. T. (2013). The Relationship between Budget Deficit and Economic Growth in Vietnam.
14. Dao, B. T., & Bui, T. (2016). Budget Deficit and Economic Growth Prediction in the Case of Vietnam.
15. Engle, R. F., & Granger, C. W. (1987). Co-integration and error correction: representation, estimation, and testing. *Econometrica: journal of the Econometric Society,* 251-276.
16. Gale, W. G., & Samwick, A. A. (2014). Effects of income tax changes on economic growth.
17. Glover, A., Heathcote, J., Krueger, D., & Ríos-Rull, J. V. (2011). *Intergenerational redistribution in the great recession* (No. w16924). National Bureau of Economic Research.
18. Hadri, K. (2000). Testing for stationarity in heterogeneous panel data. *The Econometrics Journal, 3*(2), 148-161. https://doi.org/10.1111/1368-423X.00043
19. Hsiao, C. (2003). *Analysis of panel data* (2nd ed.). Cambridge: Cambridge University Press.
20. Huynh, N. D. (2007). *Budget Deficit and Economic Growth in Developing Countries: The Case of Vietnam*. Kansai Institute for Social and Economic Research (KISER).
21. Im, K. S., Pesaran, M. H., & Shin, Y. (2003). Testing for unit roots in heterogeneous panels. *Journal of econometrics, 115*(1), 53-74.
22. International Monetary Fund (2016). IMF financial activities-update.
23. Kao, C., & Chiang, M. H. (2001). On the estimation and inference of a cointegrated regression in panel data. In *Nonstationary panels, panel cointegration, and dynamic panels* (pp. 179-222). Emerald Group Publishing Limited.
24. Keho, Y. (2016). Impact of Budget Deficit on Private Consumption in WAEMU Countries: Evidence from Pooled Mean Group Estimation. *International Journal of Economics and Finance, 8*(3), 189.
25. Kose, M. A., Prasad, E. S., & Terrones, M. E. (2003). Financial Integration and Macroeconomic Volatility. *IMF Staff Papers, 50,* 119-142.
26. Kurantin, N. (2017). The Effects of Budget Deficit on Economic Growth and Development: The Experience of Ghana (1994–2014). *European Scientific Journal, ESJ, 13*(4).
27. Leachman, L. L., Rosas, G., Lange, P., & Bester, A. (2007). The political economy of budget deficits. *Economics & Politics, 19*(3), 369-420.
28. Levin, A., Lin, C. F., & Chu, C. S. J. (2002). Unit root tests in panel data: asymptotic and finite-sample properties. *Journal of econometrics, 108*(1), 1-24.
29. Maddala, G. S., & Wu, S. (1999). A comparative study of unit root tests with panel data and a new simple test. *Oxford Bulletin of Economics and statistics, 61*(S1), 631-652.
30. Musyoka, H. M. (2013). Relationship between budget deficit and economic growth in Kenya.
31. O'Neill, J. (2012). *Outlook for Global Economy*. Goldman Sacks.
32. Pedroni, P. (1999). Critical values for cointegration tests in heterogeneous panels with multiple regressors. *Oxford Bulletin of Economics and statistics, 61*(S1), 653-670.
33. Pedroni, P. (2004). Panel cointegration: asymptotic and finite sample properties of pooled time series tests with an application to the PPP hypothesis. *Econometric theory, 20*(3), 597-625.
34. Persson, T., & Svensson, L. E. (1989). Why a stubborn conservative would run a deficit: Policy with time-inconsistent preferences. *The Quarterly Journal of Economics, 104*(2), 325-345.
35. Seater, J. J. (1993). Ricardian equivalence. *Journal of economic literature, 31*(1), 142-190.
36. Shahrokhi, M., Cheng, H., Dandapani, K., Figueiredo, A., Parhizgari, A. M., & Shachmurove, Y. (2017). The evolution and future of the BRICS: Unbundling politics from economics. *Global Finance Journal, 32,* 1-15.
37. Tabellini, G. (1991). The politics of intergenerational redistribution. *Journal of Political Economy, 99*(2), 335-357.
38. Thirunavukkarasu, V., & Achchuthan, S. (2013). Fiscal deficit and economic growth: A study on Sri Lankan economic perspective.
39. Turnbull, G. K. (1998). The overspending and flypaper effects of fiscal illusion: Theory and empirical evidence. *Journal of Urban Economics, 44*(1), 1-26.
40. Ura, J. D., & Socker, E. M. (2011). The Behavioral Political Economy of Budget Deficits: How Starve the Beast Policies Feed the Machine. *The Forum, 9*(2), 7. bepress.

41. Willett, T. D., & Laney, L. O. (2014). Monetarism, budget deficits, and wage push inflation: The cases of Italy and the UK. *PSL Quarterly Review, 31*(127).

42. Wilson, D., & Purushothaman, R. (2003). *Dreaming with BRICs: The path to 2050, 99*. New York, NY: Goldman, Sachs & Company.

43. Woo, J. (2003). Economic, political, and institutional determinants of public deficits. *Journal of Public Economics, 87*(3), 387-426. Retrieved from https://ideas.repec.org/a/eee/pubeco/v87y2003i3-4p387-426.html