Article

Tax-Spend or Spend-Tax? The Case of Southern Africa

Ntokozo Patrick Nzimande [1,*] **and Harold Ngalawa** [2,*]

[1] Department of Economics, Faculty of Commerce, University of Cape Town, Cape Town 7701, South Africa
[2] School of Economics, College of Law and Management Studies, University of KwaZulu-Natal, Durban 4001, South Africa
[*] Correspondence: Ntokozo.nzimande@uct.ac.za (N.P.N.); ngalawa@ukzn.ac.za (H.N.);
Tel.: +27-61-4925349 (N.P.N.)

Abstract: Whether to increase taxes or cut spending is an important question with profound policy implications, especially as countries attempt to deal with the consequences of the COVID-19 pandemic. This study, therefore, investigated the relationship between revenues and spending in the Southern African Development Community (SADC), where concerns about rising debt and deficits were raised prior to the pandemic. A panel bootstrap Granger-causality technique was used to analyze annual frequency data covering the 1980–2018 period. To our best knowledge, this was the first study in Africa to simultaneously account for cross-country differences and cross-section dependence. The findings of the study have in-depth implications for fiscal policy and adjustments towards budgetary equilibria. The study found no evidence of causality between revenues and spending in eleven SADC member states, suggesting that to balance their respective budgets, governments in these countries can alter either spending or revenues, or both. However, in Botswana, we found evidence of the tax-spend hypothesis, implying that governments should consider altering revenues to eliminate budget imbalances. Finally, evidence of the spend-tax hypothesis was found in Mauritius and Mozambique, suggesting that past and current expenditures drive revenues in these countries. Accordingly, cutting spending would be an ideal policy recourse to deal with budgetary disequilibrium.

Keywords: SADC; revenues; starve the beast; deficits

1. Introduction

The revenue-expenditure nexus debate, which re-gained momentum in the aftermath of the 2007–2009 economic meltdown, will inevitably resurface as countries are dealing with yet another crisis—COVID-19. The coronavirus, known as SARS-CoV-2, originated in the City of Wuhan, China, and has spread rapidly across the world. This pandemic infects hundreds of thousands of people per day (as of December 2021) and has brought economic activity to nearly a standstill as countries imposed restrictions to flatten the infection curve.

While it remains unclear when the pandemic will end, its economic impact is already evident, and represents the largest economic shock the world has experienced in decades. According to a World Bank report, the global economy contracted by −3.5% in 2020. Whether this contraction will extend beyond 2020 is contingent on the epidemiology of the virus and availability of therapeutics and vaccines. The difficulty in predicting this information makes it difficult to predict, with a reasonable degree of confidence, the impact of the virus on economic activity. Consequently, it is even more difficult to predict and/or determine the number of interventions required to put the economy on a recovery path. In Africa, the rollout of vaccines, as expected, is slower than in advanced and other emerging economies. This indicates that economic recovery will be slower in the continent, and therefore, a larger stimulus could be required to keep economies afloat and fast-track the recovery process. The World Bank (2021) predicts that in 2021, advanced economies will expand by 5.4%, emerging and developing economies by 6%, and African economies by 2.8%.

Clearly, Africa is recovering at a slower pace than advanced and other emerging economies. This uneven recovery together with the amounts of economic recovery packages that may be required in Africa is concerning, especially in the Southern African Development Community (SADC). Prior to the pandemic, the fiscus in the SADC was already strained. For instance, in South Africa, government debt was estimated to increase from 65.5% in 2020 to 71.6% in 2022/2023. However, owing to the uncertainty and costs imposed by the COVID-19 pandemic, the revised estimates suggest that, in 2020, public debt will jump to 81.8%. Before the pandemic, budget deficits in the country were projected at 6.8% in 2020/2021, narrowing down to 5.9% in 2022/2023. However, taking the pandemic into account, the budget deficit is estimated to reach 15.7% in 2020, which is 8.9 percentage points larger than pre-pandemic projections. In Botswana, the fall in mineral resources and tax payment deferments granted to mitigate the impact of COVID-19 on households and firms are expected to lead to an estimated budget deficit of 11.61% in 2020/2021. Across all SADC member states, debts and deficits are expected to reach unprecedented levels.

The dangers associated with rising and/or high debt and deficit levels are well documented in the literature. For instance, Batrancea (2021) posited that rising debt can discourage both individuals and firms from saving and investing, which, in turn, would negatively impact economic growth. Akin to this, Baum et al. (2013) found that debt adversely affects economic growth, especially if the debt is around 70–80% of GDP, as is the case for most SADC member states. In the same vein, Tung (2018) found that higher levels of government deficits not only affect economic growth but also private investments, foreign direct investments, and net exports. Chiu and Lee (2017) argued that the negative effect of debt on economic growth tends to be higher for high-risk economies, indicating that countries should borrow appropriately, based on their risk profile. Against this backdrop, institutions such as the International Monetary Fund (IMF) and some studies strongly advocate for fiscal consolidation to support economic growth (Kleis and Moessinger 2016). Heylen and Everaert (2000) and Kleis and Moessinger (2016) argued that the method of consolidation is of essence, viz. to cut spending or to raise revenues (i.e., increase taxes) or both. This exercise (i.e., choosing the correct method) will depend on the relationship between revenues and expenditures. Therefore, this study seeks to examine the relationship between revenues and expenditures in the SADC.

As highlighted in the literature (see, for example, Jaén-García 2020; Karim et al. 2006; Payne 2003; Zapf and Payne 2009), understanding the link between revenues and spending is of significance for the correction of fiscal imbalances, especially for countries with persistent deficits and for countries that have an upper bound on their deficits as a target. The latter is true for all members of the SADC. The Regional Indicative Strategic Development Plan (RISDP) of the SADC, promulgated in 2001, set the upper bound of deficits as a ratio of GDP at 3% for SADC member states. Narayan and Narayan (2006) argued that from a policy perspective, understanding the relationship between expenditures and revenues is important for several reasons. First, if revenues cause spending, then, to eliminate deficits, government should design and implement policies that will bolster government revenues. Second, if spending causes revenues, then eliminating deficits could require painful adjustments. Put differently, a reduction in government expenditure, which tends to be difficult, especially in developing countries, should be implemented. However, spending cuts should be undertaken cautiously. The costs of cutting public expenditures should not exceed the costs of keeping spending unchanged. If economic agents believe that increased spending results in increased taxes, this could trigger capital outflows. Against this background, this study sought to examine the causality, or lack thereof, between government revenues and expenditures. Despite being one of the highly indebted regions, with over 43% of its member states listed as heavily indebted poor countries, and a deteriorating fiscus, Southern Africa remains ignored as a ground for research. In this paper, we close this gap in the literature by studying SADC.

This study was also motivated by the need to corroborate the extant literature in Africa through the application of an advanced econometric technique, which can practically

account for situations experienced in the real world. It is clear from the existing literature that the nature and direction of causality between revenues and expenditures differ across countries. This implies that causality between these variables is country-specific. Therefore, it is necessary to recognize heterogeneities of the countries under investigation. Kazungu (2019), and Aworinde and Ogundipe (2015), and Phiri (2019) performed country-by-country analysis to account for country-differences. While this approach accounts for country heterogeneity, it discards, or ignores, the issue of dependence across countries. Other studies, such as Wolde-Rufael (2008), accounted for dependence and cross-country differences, albeit separately. Both these issues are always present and, therefore, should be accounted for simultaneously. Thus, findings of studies that did not jointly account for these issues are questionable. In recognition of this gap, this study employed a technique that will jointly account for these issues. To the best of our knowledge, this was the first study to conduct this technique in Southern Africa specifically, and Africa as a whole more generally.

Three key findings emerged from our analysis. First, for eleven SADC member states, we found no evidence of causality between revenues and spending, thus supporting the institutional separation hypothesis. Second, for Botswana, we found evidence in support of the tax-spend hypothesis. Lastly, in Mozambique and Mauritius, we found evidence supporting the spend-tax hypothesis. These findings have in-depth implications for the conduct and implementation of fiscal policy. The rest of this paper is organized as follows: Section 2 concisely reviews related literature, while Section 3 discusses data and methodology. Section 4 presents the study findings and Section 5 concludes the study.

2. Literature Review

In the literature, there are four trajectories that the relationship between government expenditures and revenues can take: (i) unidirectional, running from expenditures to revenues, or unidirectional running from revenues to expenditures; (ii) bi-directional between revenues and expenditures; and (iii) no causality between revenues and expenditures.

The first trajectory, a unidirectional causality running from expenditures to revenues is referred to as the spend-tax hypothesis. According to this hypothesis, the political system determines the program of action and thereafter adjusts on the tax policy/or sources of revenue to achieve the governments' plan. In the current context, the acute crisis (COVID-19) has forced governments to increase spending (and keep taxes unchanged/or reduced) to keep businesses and households afloat. In the medium to long term, governments will have to increase taxes to finance the crisis-induced spending. The crisis-justified tax increase will eventually become a permanent tax policy. Therefore, in this case, an increase in spending (even if it is temporary) causes a permanent increase in taxes (Chang et al. 2002; Peacock and Wiseman 1979). Evidence in support of this hypothesis has been provided by (Bröthaler and Getzner 2015; Karakas and Turan 2019; Payne 1998).

The causality running from revenues to expenditures is known as the tax-spend hypothesis. The notion of this hypothesis is that increased government revenues result in increased government spending. Therefore, any policy that seeks to reduce deficits by increasing revenues (taxes) will not achieve the desired outcome, but will only result in increased spending (Chang et al. 2002). The tax-and-spend hypothesis is empirically characterized by unidirectional causality running from revenues to spending. This is quite plausible, especially in a multi-party parliamentary system. When revenues increase, the political pressure to spend more also rises. It is desirable for a governing political party to increase spending because their constituencies will see them as a 'working government'. Consequently, when revenues increase, the leading party would opt to increase spending instead of reducing the deficit. On the other hand, opposition parties are more likely to put pressure on the leading party to spend, fearing that additional revenues could be misused for political gains and/or corrupt activities. Instead of reducing deficits, opposition parties would prefer increased spending. Based on the foregoing discussion, revenues are likely to result in increased spending. Mutascu (2016) and Karakas and Turan (2019), among others, found evidence in support of this hypothesis.

The fiscal synchronization hypothesis suggests that spending and revenue decisions are not made in isolation. It is argued that spending and revenues are simultaneously adjusted (see Meltzer and Richard 1981). In this case, governments can reduce deficits by adjusting either spending or revenues, or both. This suggests a bi-directional causality between public revenues and spending (Athanasenas et al. 2014). Evidence in support of this hypothesis is found in Aslan and Taşdemir (2009), Chang and Ho (2002), Vamvoukas (2012), Baharumshah et al. (2016), and Akram and Rath (2019), among others. On the other hand, there is a strand of the literature that found no relationship between government revenues and expenditures, and this is referred to as the institutional separation hypothesis (Baghestani and McNown 1994; Hoover and Sheffrin 1992; Payne 2003). This hypothesis posits that decisions on revenue and expenditures are dichotomous (Athanasenas et al. 2014).

Overall, the literature suggests that, whilst the relationship between revenues and expenditures has been extensively investigated, there has been a limited focus on African countries, which are struggling with high levels of debt and persistent deficits (Nzimande and Ngalawa 2019). Moreover, the existing studies are mostly conducted at a country level, thus ignoring the importance of cross-country dependence on the direction and nature of causality between government revenues and expenditures. This omission, therefore, warrants a study that considers both heterogeneity and interdependence across countries. As pointed out earlier, the RISDP of the SADC bloc sets 3% deficits as its limit. Consequently, if countries are to achieve this, then understanding the relationship between revenues and expenditures is warranted as this will guide policymakers on how to adjust budgets.

3. Data and Methodology

We employed a dataset comprising annual frequency data covering the 1980–2018 period for 14 SADC member states, namely Angola, Botswana, Comoros, the Democratic Republic of Congo (DRC), the Kingdom of Eswatini, Lesotho, Madagascar, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Tanzania, and Zambia. Owing to insufficient observations and/or poor data quality, Malawi and Zimbabwe were omitted from the analysis. We used data on nominal government revenues and spending as a share of GDP, collected from the World Economic Outlook (WEO) of the International Monetary Fund (IMF). The data were then transformed into natural logarithms. Therefore, unless stated otherwise, throughout the paper, revenues and spending refer to natural logarithms of government spending and revenues. Summary statistics are presented in Table 1.

Table 1. Summary Statistics.

		Mean	Standard Deviation	Minimum	Maximum
	Overall	25.299	11.805	0.637	61.559
Revenue	Between		1.616	22.618	27.867
	Within		11.698	2.357	60.002
	Overall	27.577	11.886	2.483	64.641
Spending	Between		1.814	23.917	31.187
	Within		11.752	4.736	62.644

Government spending varied between 2.5% and 64% of GDP, whereas revenues fluctuated between 0.63% and 61% of GDP on average in the SADC over the sample period. On the whole, government spending was slightly higher (28% of GDP) compared to government revenue (25% of GDP). Furthermore, the analysis revealed marginal variation in both expenditures and revenues across countries relative to what was observed within countries over time. This was not surprising. It was expected that there could be large variations in both revenues and expenditures over time depending on the circumstances (e.g., the state of the economy), but such variations were not expected to be large across countries since economies in the region are highly likely to be exposed to common/or similar shocks as they belong to the same bloc.

Economies are more interconnected today than they were a few decades ago. Consequently, disturbances occurring in one country are highly likely to be propagated to other economies. These linkages may be pronounced in the regional economic communities (RECs) such as the European Monetary Union (EMU) and the Southern African Development Community (SADC). This is because, in addition to accidental spillovers resulting from intensified trade and financial integration, the RECs are bound by several mutual policies and treaties. As noted by Pesaran (2007), ignoring these interdependencies may result in substantial bias and size distortions. As a result, cross-section dependence is tested for using the approach proposed by Pesaran (2021).

Consider the following panel data model:

$$y_{it} = \alpha_i + \beta' x_{it} + \varepsilon_{it} \qquad \forall\, i = 1,\, 2, \ldots N; t = 1,\, 2, \ldots T \tag{1}$$

The country-specific intercept, α_i, and the slope coefficient, β_i, are defined in compact form and are permitted to differ across countries. x_{it} is a $k \times 1$ vector of dynamic regressors. For each country, i, the error terms are $IID\left(0,\, \sigma_{i\varepsilon}^2\right) \forall\, t$, albeit they may be correlated across countries. In the context of Seemingly Unrelated Regression Equations (SURE), Breusch and Pagan (1980) proposed a Lagrange Multiplier statistic to test the null hypothesis of no cross-section dependence, which is valid for fixed N as $T \to \infty$. The test is given by

$$LM = T \sum_{i=1}^{N-1} \sum_{j=i+1}^{N} \hat{\rho}_{ij} \tag{2}$$

where $\hat{\rho}_{ij}$ is the sample estimate of the pair-wise correlation of the residuals. In particular,

$$\hat{\rho}_{ij} = \hat{\rho}_{ji} = \frac{\sum_{t=1}^{T} \hat{\varepsilon}_{it} \hat{\varepsilon}_{jt}}{\left(\sum_{t=1}^{T} \hat{\varepsilon}_{it}^2\right)^{\frac{1}{2}} \left(\sum_{t=1}^{T} \hat{\varepsilon}_{jt}^2\right)^{\frac{1}{2}}} \tag{3}$$

and $\hat{\varepsilon}_{it}$ is the Ordinary Least Squares estimate of ε_{it} in (1). This test, however, is not suitable for large N and small T. It is likely to exhibit substantial size distortions, because it is not correctly centered for finite T, and the bias is likely to be worsened as N gets larger. Recognizing this deficiency, Pesaran (2021) proposed an alternative test for cross-section dependence (CD), which is based on pairwise correlation coefficients instead of their squares (see Equation (3)). The test is given by

$$CD = \sqrt{\frac{2T}{N(N-1)} \left(\sum_{i=1}^{N-1} \sum_{j=i+1}^{N} \hat{\rho}_{ij}\right)} \tag{4}$$

This test has good small sample properties even when T is small, and N is large (Pesaran 2021). In Table 2, the findings of the Pesaran (2021) test for cross-section dependence are reported. At all conventional levels of significance, the results suggest the rejection of the null hypothesis of cross-section independence. This implies that the use of techniques that do not cater for cross-section dependence would yield biased and inefficient results.

Table 2. Pesaran (2021) Cross-Section Dependence Test.

Variable	CD (2021)	Correlation	Absolute Correlation
Revenue	2.99 *** (0.00)	0.07	0.41
Expenditures	3.69 *** (0.00)	0.09	0.46

*** denotes 1% level of significance.

Therefore, to account for cross-section dependence, this study employed a panel Granger-causality approach proposed by Kónya (2006). This approach makes no pre-

sumption about trend stationarity or stochastic stationarity. Some of the unit roots and cointegration tests have been criticized for having limited power, and sometimes yielding contradictory results that are contingent on imposed assumptions (see Cochrane 1991). The approach employed in this study is, therefore, immune from such criticisms since unit root testing is not necessary. However, prior to estimation, the lag structure must be determined[1]. Inclusion of many lags compromises with degrees of freedom in the number of observations and may render the findings less reliable because standard errors become relatively large (Kónya 2006). On the other hand, fewer lags imply that important information is omitted, and consequently, biased results may be produced. The bootstrap panel Granger-causality of Kónya (2006) is based on seemingly unrelated regression estimates and the Wald test, with individual-specific bootstrap critical values. Therefore, unlike competing panel Granger-causality models, this approach allows for inferences to be made at an individual level. It is specified, therefore, as follows:

$$S_{1,t} = \alpha_{1,1} + \sum_{l=1}^{mlS_1} \beta_{1,1,l} S_{1,t-l} + \sum_{l=1}^{mlT_1} \gamma_{1,1,l} R_{1,t-l} + \varepsilon_{1,1,t}$$

$$S_{2,t} = \alpha_{1,2} + \sum_{l=1}^{mlS_1} \beta_{1,2,l} S_{2,t-l} + \sum_{l=1}^{mlT_1} \gamma_{1,2,l} R_{2,t-l} + \varepsilon_{1,2,t} \tag{5}$$

$$\vdots$$

$$S_{N,t} = \alpha_{1,N} + \sum_{l=1}^{mlS_1} \beta_{1,N,l} S_{N,t-1} + \sum_{l=1}^{mlT_1} \gamma_{1,N,l} R_{N,t-l} + \varepsilon_{1,N,t}$$

$$R_{1,t} = \alpha_{2,1} + \sum_{l=1}^{mlT_2} \beta_{2,1,l} R_{1,t-l} + \sum_{l=1}^{mlS_2} \gamma_{2,1,l} S_{2,t-l} + \varepsilon_{2,1,t}$$

$$R_{2,t} = \alpha_{2,2} + \sum_{l=1}^{mlT_2} \beta_{2,2,l} R_{2,t-l} + \sum_{l=1}^{mlS_2} S_{2,t-l} + \varepsilon_{2,2,t} \tag{6}$$

$$R_{N,t} = \alpha_{2,N} + \sum_{l=1}^{mlT_2} \beta_{2,N,l} R_{N,t-l} + \sum_{l=1}^{mlS_2} S_{2,t-l} + \varepsilon_{2,N,t}$$

where S denotes government spending in country $i = 1, 2, \ldots N$ and R is government revenue in country i. t is the time period ($t = 1, \ldots, T$), N is the number of panels ($i = 1, \ldots, N$), and l is the lag length. It is assumed that error terms are cross-sectionally dependent (also see Table 1). With respect to these Seemingly Unrelated Regressions (SURs), there is unidirectional Granger-causality running from government expenditures to revenues if, in Equation (5), not all β'_{1i} are equal to zero and if all γ_{2i} are equal to zero in Equation (6). Similarly, there is one-way Granger causality running from revenues to expenditures if, in Equation (6), all γ_{2i} are not zero, but all β_{1i} in Equation (5) are zero. If neither β_{1i} nor γ_{2i} are zero, then there is a bidirectional causality between revenues and expenditures. Finally, there is no causality between revenues and expenditures if all β_{1i}s and γ_{2i}s are equal to zero (Kónya 2006). Each of these cases corresponds to the hypotheses presented in Section 2. For instance, the latter case corresponds to the institutional separation hypothesis.

4. Empirical Results

Table 3 presents findings of the bootstrap panel Granger-causality Test. As shown in the table, neither the β'_{1i}'s nor the γ_{2i}'s are statistically significant in eleven SADC member states. This implies that, in Angola, Comoros, the Democratic Republic of Congo (DRC), the Kingdom of Eswatini, Lesotho, Madagascar, Namibia, Seychelles, South Africa, Tanzania, and Zambia, there is no causality between public revenues and expenditures. This finding lends support to the institutional separation hypothesis, which states that revenue and spending decisions are made independently and separately. As a result, there is no causal relationship between these variables. Wolde-Rufael (2008) posits that the lack of a causal link between revenues and spending could be attributed to the presence of many factors, with different interests and agendas, in the decision-making process, and that disagreements between parties in the decision making are the cause of the pattern of mounting government debts/deficits. Put differently, the lack of and/or poor coordination

between the legislative and executive arms of government is the reason behind the lack of a causal link between the two variables of interest. This makes it difficult to enact policies that would lead to a reduction in debt. Our findings are consistent with Narayan and Narayan (2006), who found evidence of neutrality for South Africa, among others. Because of the lack of a causal link between revenues and expenditures, governments can alter either spending or revenues to achieve fiscal balance (Wolde-Rufael 2008).

Table 3. Test Results for Bootstrap Panel Granger-causality Test.

Country	H_0 Revenue Does Not Granger Cause Spending			H_0 Spending Does Not Granger-Cause Revenue		
	Coefficient	Wald Test	*p*-Value	Coefficient	Wald Test	*p*-Value
Angola	0.017	0.03	0.955	0.164	0.397	0.538
Botswana	−0.326	5.193	0.037 **	0.172	0.242	0.630
Comoros	0.431	0.957	0.343	−0.197	3.065	0.100
DRC	0.149	0.857	0.369	0.249	2.257	0.154
Eswatini	−0.179	1.481	0.242	0.039	0.013	0.912
Lesotho	−0.102	0.088	0.770	0.142	0.465	0.506
Madagascar	0.051	0.005	0.944	0.264	0.643	0.435
Mauritius	−0.296	1.012	0.330	0.663	5.202	0.038 **
Mozambique	−0.218	0.642	0.436	0.883	4.195	0.059 *
Namibia	−0.174	0.655	0.431	0.893	0.945	0.763
Seychelles	0.029	0.030	0.865	0.411	1.501	0.239
South Africa	−0.200	0.532	0.477	−0.145	0.330	0.564
Tanzania	0.076	0.083	0.776	0.254	0.940	0.348
Zambia	0.426	0.828	0.377	0.050	0.231	0.638

** & * denote 5% and 10% levels of significance, respectively. Italic, it is convetional to write hypotheses in italics. we follow the tradition in the literature.

For Botswana, our findings indicate that causality runs from revenues to expenditures, which supports the tax-spending hypothesis. The sign of the coefficient offers additional insights about the revenue-spending nexus in Botswana. It is shown that revenues drive spending with a negative sign. This finding is consistent with Buchanan and Wagner (1978). These scholars assert that a rise in taxes could result into a cutback in the demand for public spending due to *fiscal illusion*. Therefore, to lessen fiscal deficits/or debts, the government should consider raising, instead of cutting, taxes, which in turn would lead to a reduction in government spending. It is inferred, therefore, that in its effort to balance its budget, the government of Botswana should consider raising taxes. Our findings contradict Friedman (1978) and other proponents of the "*starve the beast*" view, wherein it is believed that to tame the beast, one must starve it (Tempelman 2006). The idea is that to enforce discipline in government spending, taxes must be reduced regardless of the state of the economy (Tempelman 2006). Consistent with the "*starve the beast*" view, Parkinson's *Second Law* states that expenditures adjust to income. Consequently, to eliminate spending, and thus, to balance the budget, one must reduce the revenues available to spend. This view has, however, received a lot of criticism, with many scholars arguing that it does not hold and it is not supported by empirical evidence (for example, see, Bartlett 2007; Niskanen 2006). Our findings are also different from those of Wolde-Rufael (2008) who found no causal relationship between revenues and expenditures in Botswana.

The spend-tax hypothesis was only confirmed in Mauritius and Mozambique, where causality runs from spending to revenues. This implies that in Mauritius and Mozambique, revenue adjustments are determined by current and past expenditures. Hence, a rise in current expenditures will inevitably require future revenues to also increase (Linhares et al. 2021). Accordingly, to effectively eliminate fiscal imbalances, increasing taxes, reducing spending, or both are viable policy options.

5. Conclusions

The coronavirus, known as SARS-CoV-2, has severely disrupted the global economy leading to the worst recession since the Great Depression of the early 1930s. Therefore, countries will require substantial stimulus packages not only to keep their economies afloat during the pandemic, but to fast-track the recovery process. Undoubtedly, debts and deficits will reach unprecedently high levels in nearly all economies, particularly in African countries where, prior to the pandemic, concerns had already been raised. Dangers of high debts/or deficits are well documented in the literature. High interest rates which, in turn, discourage private investment, hinder economic growth and long-term sustainability, among others. As a result, there is a need to curtail debt and consolidate government finances. However, the question is how? The literature offers little or no guidance on how a country should go about balancing its budget. While various studies suggest raising taxes, some propose cutting spending, while others recommend undertaking both (Chang et al. 2002; Peacock and Wiseman 1979); (Bröthaler and Getzner 2015; Karakas and Turan 2019; Payne 1998).

Against this background, this study investigated the causal relationship between revenues and expenditures in Southern Africa. A panel bootstrap Granger-causality method advanced by Kónya (2006) was employed to analyze the data covering the 1980–2018 period. Several findings emerged from the analysis. First, the study found no evidence of causality between revenues and expenditures for 11 SADC member states, thus supporting the institutional separation hypothesis. This implies that governments in these countries can manipulate either revenues or expenditures to achieve budget balance. Second, it was found that in the case of Botswana, revenues drive expenditures, with a negative sign. This suggests that to balance its budget, the government of Botswana should consider raising taxes. This is contrary to the starve the beast approach, which asserts that raising revenues would not achieve the desired results—i.e., balancing the budget. Finally, we found evidence for the spend-tax hypothesis for Mauritius and Mozambique, implying that past and current expenditures drive revenues. Therefore, an increase in spending today would unavoidably require a corresponding increase in future taxes. It is, therefore, concluded that cutting spending would be an ideal policy recourse to eliminate budgetary disequilibria.

Note

[1] the appropriate lag length is selected using Akaike Information Criteria (AIC) and the estimated number is 1 for all member countries. Results to this effect are available from the authors upon request.

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