ESSAYS ON FISCAL POLICY: EMPIRICAL EVIDENCE FROM SSA COUNTRIES

THESIS BOOK OF THE PHD DISSERTATION

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1. Background of the study

Amid the global financial crisis (GFC), fiscal spending shocks, fiscal sustainability, and fiscal consolidation have become hot topics in the policy discourse of Sub-Saharan African (SSA) countries. In response to the GFC, fiscal authorities in SSA countries have introduced large-scale fiscal stimulus packages to revive the economic slowdown. However, the expansionary fiscal strategy is accompanied by a deterioration in fiscal sustainability. Again, as the GFC began, the fiscal balance deteriorated, and most SSA countries' public debt ratios rose sharply. Consequently, the gap between expenditures and revenues has grown, leading to a widening budget deficit and a barrier that restrains economic growth.

Consequently, SSA nations are compelled to take action to put their fiscal policies on a sustainable course by adjusting their fiscal stances and expanding their fiscal buffer to deal with potential future economic downturns. Nevertheless, the effects of discretionary fiscal policy and fiscal sustainability, considering the specific features of SSA countries, have received little attention in the empirical literature. In this context, accurately measuring the effects of discretionary fiscal policy was essential for macroeconomic stability and prudent fiscal policy.

Furthermore, the COVID-19-led recession poses new challenges to the region's fiscal imbalances. On one side, most governments increased fiscal stimulus to mitigate the economic crisis caused by the pandemic. On the other side, the pandemic significantly impacts the countries' public revenue, primarily through a drop in commodity export prices and volumes and a reduction in tax revenue due to the lockdown. Consequently, fiscal deficits widen as revenues fall, prompting policymakers, governments, and academia to investigate the post-COVID-19 exit strategy.

Interestingly, countries use fiscal policy instruments to either ensure public finances' sustainability or respond to economic shocks. In any circumstance, it is essential to precisely assess the impact of fiscal policy instruments on economic activity. This study is significant for SSA due to soaring public debts and fiscal imbalances that necessitate fiscal adjustment during extended periods of fiscal instability. In addition, this paper attempts to establish a connection between the macroeconomic effects of fiscal policy shocks and the long-term effects of fiscal sustainability with consolidation measures. As a result, it is timely to ask the following research questions: to what extent does the size of fiscal multipliers vary with the structural and transient factors of SSA economies? Given the possibility of increased government spending to stimulate the economy and the risk of increasing the public debt-to-GDP ratio, what level of public debt would ensure public finance sustainability? To what extent does fiscal policy constrain economic growth? Answering these three research questions helps us understand the impact of fiscal policy instruments and prescribe desirable policy tools.

2. Statement of the problem

In pursuit of macroeconomic stability, SSA's economy had prolonged periods of instability by relying on monetary policy instruments rather than fiscal policy instruments (Phiri, 2019). However, monetary-based policies failed to achieve macroeconomic stability for the economies. Consequently, there is a growing consensus regarding implementing fiscal instruments as a critical policy to achieve a steady-state sustainable budget. Furthermore, the GFC has unequivocally illuminated the importance of fiscal policy to economic crises. Several studies contend that expansionary fiscal policy can stimulate economic growth, whereas other studies contend that contractionary fiscal policy can stimulate economic growth in the short term. Moreover, the magnitude, persistence, and identification of contemporaneous fiscal shocks have become a global policy priority. Moreover, the literature on the effects of fiscal policy in SSA economies is inconclusive and systematic investigation is lacking.

There is a long-standing debate about the contemporaneous effects of fiscal policy and its transmission mechanisms both in theory and practice. In addition, the literature on the size and persistence of fiscal multipliers in developing countries, whether larger or smaller than those in other developed and emerging economies, remains unclear. As discussed by the IMF (2014) and Honda et al. (2020), developing countries have a lower monetary response to output; lower automatic stabilizers; and a higher rate of unemployment, which may result in larger fiscal multipliers. On the other hand, low precautionary savings, economic openness, and a more volatile environment may dampen fiscal effects.

In addition, due to unstable access to capital markets and these countries' inability to borrow, sustainable public finance is crucial for countries such as those SSA. These issues can be an essential incentive to avoid a considerable accumulation of public debt (Mendoza and Ostry, 2008). However, increasing debt accumulation due to fiscal stimulus is associated with a greater likelihood of default and a drag on economic growth, significantly when it exceeds a certain threshold (Mahdavi and Westerlund, 2011; Baharumshah et al., 2017). Consequently, the sustainable level of public debt has sparked renewed interest in threshold analysis as a means of assessing the sustainability of fiscal stances in recent studies, despite little being known about the fiscal sustainability of SSA countries.

Expansive fiscal policy could result in enormous public deficits, pressure interest rates, and discourage private investment, which is likely to result in unsustainable public finances. Therefore, governments may engage in restrictive fiscal policy via fiscal consolidations. In contrast, a reduction in public expenditures would likely result in a decline in consumption, output, and employment. The solution to this debate depends on answering the research questions that are not mutually exclusive: to what extent does expansionary fiscal policy stimulate economic growth? Considering an increase in government spending to stimulate the economy and the risk of a rise in the public debt-to-GDP ratio, what level of public debt would ensure the sustainability of public finances? How much does contractionary fiscal policy retard economic expansion?

In sum, the sharp increase in fiscal spending implemented at the onset of the GFC accompanied a long-term worsening of budget deficits and public debt accumulations. Moreover, plans for fiscal consolidation must be evaluated based on their potential short-term impact on economic activity. These issues have become a source of debate in the empirical literature, and there is little consensus on the effect of fiscal spending shocks, fiscal sustainability, and fiscal consolidation. On top of these, most cited papers have ignored the experience of SSA countries. In light of the preceding discussions, this study will shed light on the interactions between fiscal spending shocks, fiscal sustainability, and fiscal consolidation in the SSA region. By examining these, this study will contribute new insights to the literature on fiscal policy instruments and guide the future by outlining potential approaches to addressing issues about macroeconomic stability and the sustainability of public finances.

Despite the abundance of literature on fiscal policy effects related to the study, the majority of studies have largely neglected to address the following issues:

a) In fiscal policy analysis, the studies focusing on developed nations failed to account for characteristics of SSA economies, such as dependence on foreign aid, sensitivity to external and domestic shocks, commodity trade shocks, political instability, weak policies and institutions, procyclical fiscal policy, widespread poverty, high unemployment, and sizable informal labor markets. Thus, it is vital to conduct empirical studies focusing on the specific region rather than treating it as an outlier or dummy variable in studies comprising a large panel of advanced and developing countries.

b) SSA countries' economies differ from the developed world because of their excessive use of external debt to finance fiscal deficits, massive infrastructural needs, and limited fiscal space to finance public spending. Due to the region's unique characteristics, studies focusing on those characteristics are required.

c) Little is known about the asymmetric effects of discretionary fiscal policy shocks under different economic conditions. Moreover, the sign and size of fiscal impulses vary over structural economic features, requiring a non-linear approach to better estimate the actual magnitude of the fiscal multipliers. However, the empirical studies documented in SSA countries do not entail a non-linear pattern of fiscal policy.

d) Most previous studies in SSA countries evaluate fiscal sustainability using the methods outlined by Trehan and Walsh (1988, 1991) while ignoring the nonlinear fiscal reaction function. Considering the asymmetric response of fiscal policy to the increasing debt hypothesis, this chapter applies a non-linear approach to generate correct inferences from the model specification techniques.

e) The literature on the impact of fiscal consolidation on economic activity in SSA countries is thin, and the existing studies focused only on the impact of fiscal consolidation on output and neglected its effects on private demand and unemployment. In addition, the studies neglect the state-dependent effects of fiscal consolidation on output and the heterogeneity effect of the fiscal instrument on output.

The value addition of this study is numerous. First, this study investigates three sequential fiscal policy-related research questions and provides detail evidence on the effects of fiscal policy with a broader sample of SSA countries. Notably, the study's findings can assist policymakers in determining whether contemporaneous fiscal policy is essential for fostering economic growth under various economic conditions. In line with this, this study, to the researchers' best knowledge, is the first study that examines the asymmetric effects of fiscal policy using a panel threshold model. Moreover, this paper estimates the effect of political regimes on fiscal policy, which is lacking in the literature. Second, this paper advises policymakers to use the public debt ceiling to rule out an excessive reliance on higher debt to stimulate economic growth in SSA countries and to identify the factors that determine fiscal sustainability. Third, using an appropriate methodology, this paper suggests the macroeconomic effects of fiscal consolidation on economic output, unemployment, consumption, private investment, REER, and current account balance. Finally, it provides future researchers with a deeper understanding of SSA fiscal policy. Researchers and policymakers interested in how fiscal spending shocks affect economic growth, the dynamics of fiscal sustainability in the region, and the effects of contractionary fiscal policy on economic activity should find the results of this study proper. This thesis also aims to contribute to the existing literature on discretionary fiscal policy.

3. Objectives of the study

Fiscal policy tools have piqued the interest of many governments and academics worldwide due to their ability to respond to aggregate demand shocks. As a result, this thesis empirically assesses the effect of discretionary fiscal policy and fiscal sustainability for SSA countries.

This thesis addresses three specific objectives that figure centrally in fiscal policy.

- ✓ To investigate the determinants and magnitude of fiscal innovations under SSA countries' key economic features
- ✓ To identify determinant factors of fiscal sustainability
- ✓ To identify the determinant factors of fiscal consolidation and assess its effect on economic activity

3.1 Research questions

This thesis addresses three research questions:

(1) To what extent does the fiscal multipliers' size vary with the structural and transitory factors of SSA economies?

(2) Considering an increase in government spending to stimulate the economy and the risk of a rise in the public debt-to-GDP ratio, what level of public debt would ensure the sustainability of public finances in SSA countries?

(3) How much does contractionary fiscal policy retard economic activity in SSA countries?

3.2 The hypothesis of the study

Accordingly, we proposed the following hypotheses:

H_1: Expansionary fiscal policy does not significantly affect output in the short-to-medium term in SSA countries.

H_2: Primary balance and public debt have a linear relationship in SSA countries.

H_3: Contractionary fiscal policy does not significantly affect economic activity in the short run in SSA countries.

4. Significance of the study

This thesis contributes not only to current macroeconomic policy by providing vital information but also to the maintenance of sustained economic growth through fiscal sustainability. SSA economies are distinguished by their excessive reliance on external debt to finance fiscal deficits and enormous infrastructure requirements. This thesis aims to suggest improved methods for addressing fiscal imbalances and economic distortions of countries caused by excessive debt accumulation and to elevate the fiscal sustainability issue to the top of the policy agenda.

Therefore, the results demonstrated in this thesis are expected to serve as a basis for researchers and policymakers interested in how fiscal spending shocks affect economic growth, the dynamics of fiscal sustainability in the region, and the effects of contractionary fiscal policy on economic activity. Moreover, this thesis aims to add to the growing literature on discretionary fiscal policy in SSA countries.

5. Scope of the study

This study's data range from 2000 to 2019. We chose this period to capture the resurgence of discretionary fiscal policy as a cornerstone of most SSA countries on the one hand and the consistent availability of balanced panel data from the same source on the other hand. Data are gathered from 40 SSA countries. Furthermore, this study covers 40 SSA countries out of the total 45 SSA countries, depending on the availability of long comparable time series data in those countries. It also employs a robust technique that guards against panel estimation problems such as cross-sectional dependence, autocorrelation, and endogeneity.

6. Summary

This thesis has investigated the macroeconomic effects of discretionary fiscal policy, fiscal sustainability and consolidation effects. This research study was primarily motivated to provide useful insights to the effects of discretionary fiscal actions on the economy through either fiscal stimulus packages (used to avoid another great recession) or fiscal consolidations (used to stabilize the fiscal deficit) using large sample from SSA countries, long time-series periods, and novel estimation methodologies. The chapter summarizes the main findings of the dissertation and the central ideas that run through the thesis, establishing a connection between the macroeconomic effects of fiscal policy shocks; the long-term effects of fiscal sustainability and consolidation measures followed by suggesting recommendations for action and identifying knowledge gaps to be addressed in future studies.

In pursuit of macroeconomic stability, SSA's economy prolongs periods of instability by relying on monetary policy instruments rather than fiscal policy instruments (Phiri, 2019). However, monetary-based policies failed to achieve macroeconomic stability for economies. Consequently, there is a growing consensus regarding implementing fiscal instruments as a critical policy to achieve a sustainable budget at a steady-state. Furthermore, the GFC has unequivocally illuminated the importance of fiscal policy to economic crises. That is, the sharp increase in fiscal spending implemented at the onset of the GFC was accompanied by a long-term worsening of budget deficits and public debt accumulations, which eventually led to a debt crisis. In turn, plans for fiscal consolidation must be evaluated based on their potential short-term impact on economic activity. As a result, these issues become a source of debate in the empirical literature, and there is little consensus on the effect of fiscal spending shocks, fiscal sustainability, and fiscal consolidation.

Due to unstable access to capital markets and these countries' inability to borrow, sustainable public finance is crucial for countries such as those SSA. This is a significant incentive to avoid a large accumulation of public debt (Mendoza and Ostry, 2008). Moreover, increasing debt accumulation due to fiscal stimulus is associated with a greater likelihood of default and a drag on economic growth, especially when it exceeds a certain threshold (Baharumshah et al., 2017; Mahdavi and Westerlund, 2011). In addition, the sustainable level of public debt has sparked renewed interest in threshold analysis as a means of assessing the sustainability of fiscal stances in recent studies, despite little being known about the fiscal sustainability of SSA countries.

On the other hand, expansive fiscal policy could result in enormous public deficits, pressure interest rates, and discourage private investment, which is likely to result in unsustainable public finances. Therefore, governments may engage in restrictive fiscal policy via fiscal consolidations. In contrast, a reduction in public expenditures would likely result in a decline in consumption, output, and employment. The solution to this debate depends on answering the research questions that are not mutually exclusive: to what extent does expansionary fiscal policy stimulate economic growth? Considering an increase in government spending to stimulate the economy and the risk of a rise in the public debt-to-GDP ratio, what level of public debt would ensure the sustainability of public finances? How much does contractionary fiscal policy retard economic expansion?

Chapter three presents working definitions and concepts for the conduct of the study. It also presents fiscal policy instruments and fiscal policy goals in modern economies. Subsequently, the chapter introduces the concepts of fiscal spending shocks, fiscal sustainability, and consolidation from the existing literature. Lastly, the chapter highlights new dimensions of sustainable development.

Chapter three presents the overview of SSA countries' fiscal and economic performance. Over the last decade, the average public debt of SSA countries increased from 32% to 55.6% of GDP, causing the region’s debt stock to grow rapidly, partly due to expansionary fiscal policy responses. The primary balance has deteriorated to its lowest point since the GFC, owing to a drop in oil prices. Following a series of fluctuations in economic growth, SSA economies’ growth decreased in 2009 to 3% and has since experienced the lowest level of economic growth at 2.6% in 2015. This suggests that, while SSA countries’ economic integration into the global economy is limited, their economies are vulnerable to shocks outside the continent.

Furthermore, when the COVID-19 pandemic began, SSA countries' macroeconomic situation suffered. Furthermore, the pandemic harmed countries’ fiscal positions by causing revenue losses associated with an economic slowdown and declining commodity export revenues. Furthermore, donor aid flows were reduced, which impacted most SSA countries because aid funds account for a sizable portion of their budgets.

In chapter four, this thesis identifies fiscal shocks using a panel threshold Vector Autoregressive (TVAR) model and examines several economic characteristics to fit the characteristics of African economies, for which there are few studies. This section's dataset was constructed annually, spanning from 2000 to 2019, for 40 SSA countries. The section raises five questions to be addressed. First, do the impulses of discretionary fiscal policy vary over business cycle shocks? Second, does debt burden determine fiscal multipliers' sign, size, and persistence? Third, is trade openness a factor in the output response to discretionary fiscal policy? Fourth, does the size of fiscal innovations vary under fixed and floating exchange rate regimes? Fifth, does institutional quality determine fiscal multipliers' sign, size, and persistence? The estimated fiscal multipliers cover a broad spectrum of SSA nations. This study contributes to the literature by considering the asymmetric effects of fiscal policy when estimating multipliers for a variety of key economic characteristics, as opposed to the linearity assumptions that have been the focus of many previous studies. Finally, this section calculated average multipliers considering SSA nations' cross-sectional dependence.

The results confirm an asymmetry or nonlinear output response to a discretionary fiscal policy under several structural economic characteristics in SSA economies. The findings suggest that: (1) an unanticipated fiscal policy raises output, on impact, has more impulse in periods of recession, 0.09%, than in periods of expansion, 0.024%. (2) on impact, the impact elasticity of fiscal policy shocks to output for highly indebted countries is 0.04%, whereas it is 0.08% for low-indebted countries. (3) As for the asymmetric effect of fiscal stimuli on impact, the response of output to structural shocks of fiscal spending under a closed economy is 0.09% and 0.04% under an open economy. (4) if fiscal policy increases by 1%, on impact, output increases by 0.05% in economies that practice a floating exchange rate. At the same time, the effect of unanticipated fiscal spending shocks on real GDP growth is small at all horizons, with a 0.08% impact multiplier in economies that practice a fixed exchange rate. Lastly, an increase in unanticipated government spending leads to an immediate increase in real GDP growth in SSA countries with a democratic political regime. The findings reveal that, fiscal policy innovations can be boosted by the conjunction of several structural economic characteristics, such as recession, fixed exchange rates, lower trade openness, lower debt burden, and transformed into a democratic regime, among others. Hence, policymakers should act accordingly to cultivate sizable, persistent, and long-lasting effects through fiscal policy.

In chapter five, this thesis thoroughly examines fiscal sustainability through a nonlinear fiscal reaction function based on a dynamic panel threshold model, which is lacking in the empirical literature. This study used a nonlinear impact analysis with debt thresholds imposed endogenously. The study first estimated the coefficient of the FE model for government expenditure was 0.88, implying that governments' revenue climbs by less than 1% for every 1% increase in public expenditure. This finding has important implications, suggesting weak fiscal sustainability of SSA countries over the period 2000–2019. Second, applying a dynamic panel threshold model, the results indicate that fiscal responsiveness weakens when the public debt-to-GDP ratio exceeds 55%, suggesting that SSA countries will continue to face unsustainable debt burdens as debt mounts. Below the threshold, the lag of primary surplus is positive and significant, confirming the dynamism of primary balance and the persistence of governments' fiscal reaction to past debt accumulations. Lagged debt has both statistically significant and positive effects at the 10% level; however, above the threshold, the debt value is insignificant, although it exhibits a negative sign. This indicates the government's fiscal reaction to satisfy the IBC below the public debt threshold. Current account balance (%GDP) has both statistically significant and positive effects in the lower regime, supporting the twin deficit hypothesis for SSA countries. The coefficient of the spending gap is negative and significant, only below the threshold. The estimates of debt relief exhibit a positive sign in the lower regime and a negative in the upper regime. This can be justified as HIPC benefited countries below the threshold, helping to reduce foreign debt and improve primary surplus; however, as countries' borrowing increases and surpasses the threshold, it jeopardizes countries' budget balance.

Moreover, the causality linkages between government revenue and government expenditure reveal a unidirectional flow from expenditure to revenue in SSA countries, implying that governments correct fiscal revenue to match the budgetary expenditure. Lastly, a nonlinear quadratic reaction in the debt (%GDP) specification using alternative estimation methods was tested to validate the results. The results from the alternative models demonstrate that no significant change in the signs of the public debt and the control variables is observed.

In chapter six, this thesis investigates the macroeconomic effects of fiscal consolidation, which is far from having reached a consensus by using recent and comprehensive datasets and applying the Nobel method, and local projection method (Jordà, 2005). This chapter empirically answers these questions: What are the determining factors of fiscal consolidation decisions? Does the expansionary austerity hypothesis hold for SSA countries? To what extent is the decrease in economic activities associated with fiscal consolidations? Compared with revenue-based consolidation, is spending-based consolidation less recessive to growth? Should fiscal consolidation be preceded by recession or expansion? The data is constructed from a balanced panel dataset of 40 SSA economies from 2000 to 2019. The findings of the study are twofold. First, the paper finds that the initial conditions of output growth, output gap, current account balance, financial crisis, public debt, and official development assistance (ODA) received are positively associated with the likelihood of fiscal consolidation implementation.

In contrast, the initial budget balance decreases the likelihood of tight fiscal policy decisions. Second, based on the local projection method (LPM) estimation, our study rejects the expansionary austerity hypothesis and supports its recessionary effect on output and the crowding-out effect on private demand. Moreover, we find that revenue-based consolidations lead to more output loss than spending-based consolidations. Furthermore, our findings support the claim that consolidation episodes initiated in boom periods have lower contractionary effects than those initiated in recession periods. Finally, the robustness of the findings of this study is tested by using an alternative definition of fiscal consolidation and various econometric methodologies.

7. Conclusion

The thesis focuses on the interaction among transmission mechanisms for discretionary fiscal policy, long-run fiscal sustainability, and contractionary fiscal policy. We lighten the contemporaneous effects of discretionary fiscal policy shocks, the threshold level of the public debt level that makes the fiscal policy sustainable, and identifies the causes and effects of fiscal consolidation on economic activity.

Based on the preceding discussion and addressing pertinent research questions, this thesis concluded the following:

I. Fiscal Multipliers and Structural Economic Characteristics: Evidence from Countries in Sub-Saharan Africa

This study examined the output response to discretionary fiscal spending shocks under several key characteristics of economies using annual data from 40 SSA countries covering periods from 2000 to 2019. The study applied a panel TVAR model to assess the effects of orthogonal and unanticipated fiscal spending shocks. The results confirm an asymmetry or nonlinear response of output to a discretionary fiscal policy under several structural economic characteristics. The impact of an unanticipated increase in fiscal spending on output reveals (1) the exogenous cumulative government spending shock effect on output is gauged to be sizable in downturns than in upturns. (2) the cumulative fiscal multiplier of less indebted countries is sizable and more persistent than that of highly indebted countries. (3) The long-run multiplier suggests that economic openness is the primary determinant of fiscal multipliers, with larger cumulative impulse responses under economies with a lower propensity to import than those open to trade. (4) The output response to an exogenous fiscal policy under flexible exchange rate regimes is smaller than the fixed exchange regime at all horizons. Finally, (5) the cumulative output response under a democratic governance regime has a larger multiplier in the long run than in autocratic governance regime countries. In sum, this study corroborates the Keynesian perspective on fiscal spending shocks, as it consistently finds the responses of an economy's business cycle, exchange rate regime, trade openness, debt burden, and governance regime to the announcements of fiscal policy in SSA countries. Similarly, no single fiscal multiplier can be assigned to a country.

I. Fiscal sustainability in sub-Saharan African countries: A dynamic panel threshold model

We investigate the primary budget balance response to public indebtedness in SSA countries, assessing governments' nonlinear fiscal reaction functions from 2000–2019. The study applies various techniques, including a dynamic panel threshold model, two-step GMM, Prais–Winsten regression, bias-corrected FE, Driscoll–Kraay standard error regressions, and FE (within) regression with AR(1) disturbances. The study demonstrates that primary balance reacts much more slowly to government solvency constraints when debt exceeds 55% of GDP. From all the various techniques applied, the estimated coefficients indicate that the primary balance positively responds to rising lagged debt at low to moderate levels; however, when the debt ratio becomes sufficiently high, the primary balance slowly responds to the rising debt level to satisfy government solvency constraints. The findings of the study also indicate that fiscal policy is countercyclical, evidence for the "twin deficits" hypotheses, and a negative effect from temporary increases in government outlays. Furthermore, there is a unidirectional flow from expenditure to revenue in SSA countries, implying that the government corrects fiscal revenue to match the budgetary expenditure.

II. Effects of fiscal consolidation on economic activity in SSA countries

Using panel data from 40 SSA countries from 2000 to 2019, this study finds the determinants of the initial conditions for tight fiscal policy decisions and examines whether the contractionary austerity hypothesis holds for SSA countries. In addition, this study unveils output response to the composition of consolidation episodes and the business cycle of an economy. This study identifies the fiscal episodes using the change in the CAPB-to-GDP and applies the LPM proposed by Jordà (2005) to estimate the impulse response functions. Based on our definition, the study identifies 247 fiscal consolidation episodes in SSA countries from 2000 to 2019. Among the 247 fiscal episodes, 151 are spending-based consolidations, and 96 are revenue-based consolidations. Regarding the duration of the episodes, 139 instances are short-stay episodes that last a year, whereas 48 episodes stay two to three years. The average improvement in the CAPB is 5.24% of GDP, with a standard deviation of 3.2%.

The study finds that the probability of fiscal consolidation is positively associated with initial GDP growth, initial output gap, initial current account balance, and financial crisis in the economy. In contrast, the lagged budget balance reduces the probability of fiscal consolidation decisions. Moreover, the study finds that fiscal consolidation supports the standard Keynesian proposition, having contractionary effects on output and private demand in the short term. In addition, compared with tax-based consolidations, spending-based consolidations lead to smaller losses in output. Furthermore, fiscal consolidations implemented in an expansion period are less contractionary than those implemented in a recession period. In a nutshell, the paper corroborates the Keynesian perspective on fiscal policy consolidations, as it finds consistently adverse effects on economic activity as measured by real GDP growth.

8. Policy Implication

The thesis following the results of chapters four, five, and six, therefore, recommends policymakers to earn sizable, persistent, and long-lasting effects through fiscal policy have to do the following:

Policy recommendation from Chapter four

- Countercyclical fiscal policy is found to be substantial, and contractionary fiscal adjustment is advised when there are positive output gaps rather than negative output gaps.
- In order to have effective fiscal policy must target hand-to-mouth consumers (non-Ricardian consumers) and firms with limited liquidity, concentrating on social services and social protection to increase short-term demand.
- The effectiveness of interventions in fiscal policy depends on how well-established the institutions are that support public trust in the government. Therefore, SSA nations must practice democratic governance to improve their institutional capabilities to hasten the effects of fiscal policy on private demand.
- Fiscal multipliers are discovered to be larger for less indebted countries. Thus, maintaining control over public debt can enhance the impact of fiscal stimulus programs.

Policy recommendation from Chapter five

- SSA governments should ensure that their public debt management plans adhere to the public debt ceiling that promotes fiscal sustainability.
- The study's findings rule out using excessive public debt to achieve fiscal sustainability.
- Policymakers should maintain prudent fiscal policies by enhancing revenue mobilization and rationalizing expenditures to ensure fiscal sustainability and build fiscal buffers over the long term.

Policy recommendation from Chapter six

- This study recommends that if governments decide to tighten fiscal policy in the future, it has to be carried out by reducing spending rather than increasing taxes. Restructuring state-owned businesses and reducing fuel and energy subsidies are some ways how this can be achieved to demonstrate the fiscal health of governments and stabilize macroeconomic conditions in various nations. In addition, to reduce costs to the government, governments should also broaden their tax bases.

- If fiscal consolidation is necessary, it should be carried out during economic expansion to avoid incurring excessive costs.

9. Limitations and directions for future research

This study has contributed to the literature by presenting new findings that can serve as guidelines for future research. Nonetheless, there are some limitations to this study. First, many variables have missing observations, or long comparable annual series are unavailable. For example, the study's analysis is limited to only public spending effects due to a lack of long time-series data on fiscal variables such as public investment and government consumption variables at the disaggregated level.

Second, global shocks such as the COVID-19 pandemic and the conflict in Ukraine are not considered. Further research incorporating these global shocks would add another dimension to policy formulation because these factors significantly impacted fiscal policy.

Third, future research focusing on disaggregating public spending into public consumption and investment, as well as tax revenue into direct tax and indirect tax, and examining the relationship between the budget balance and the budget composition would add another dimension to policy formulation, given that the composition of government spending has shifted significantly over time. Furthermore, future research on the distributional effects of fiscal consolidation and the political difficulty of cutting government spending could have policy implications. Furthermore, investigating fiscal policy financing sources may have additional implications for macroeconomic stability and fiscal policy sustainability.

Fourth, this dissertation is limited to economic perspectives only, whereas institutional factors and the political economy of the countries have significant contributions to public debt and budget balance. Finally, more research could add further insights into the body of knowledge.

Fifth, focusing only on the optimal quantity of debt is not enough to examine the fiscal sustainability of countries but also requires a comprehensive policy response that considers the residual maturity of the debt and public debt structure. Moreover, it should also be complemented by pension and healthcare expenses arising from population aging. Thus, future research should focus on the debt structure, denomination, residual maturity of the debt and aging to address long-term fiscal sustainability smoothly.

10. Contribution of the study

Chapter four estimates the nonlinear effect of SSA fiscal impulses. To the researcher's best knowledge, this study is the first to conduct a panel TVAR model to examine the asymmetric effects of fiscal policy on output by extending the scope of previous research by estimating the fiscal multipliers under various structural and transient factors of the economies. In addition, this section sheds light on adding to the limited research on the output response to discretionary fiscal policy in SSA countries, covering forty SSA nations and identifying the fiscal shock using a panel TVAR model. Furthermore, this chapter is the first systematic paper to estimate how fiscal multipliers vary with the political regimes of the economies of SSA countries. On top of these, previous studies on state-dependent fiscal multipliers focus only on the business cycle of an economy, while this study characterized the state based on the economic cycle, debt burden, exchange rate regime, trade openness, and political regime. The main message of this section is that the macroeconomic effect of fiscal impulses on output depends on various factors, including the state of the economy, its debt burden, its openness, its exchange rate regimes, and political governance regimes.

Chapter five helps in three ways. First, the study's primary novelty is its coverage of a diverse range of SSA countries and examination of a nonlinear fiscal reaction function for SSA countries, which few studies have done. Second, existing studies overestimate the threshold level by employing the general method of moments (GMM) (Okwoche and Iheonu, 2021; Mupunga and Ngundu, 2020). Unlike previous studies, this one employs a dynamic panel threshold model with a first-differenced estimator GMM to address the issue of endogeneity. Third, identifying causality links between government revenue and government expenditure could provide essential insights into how these economies can manage fiscal imbalances in the future. We test a nonlinear quadratic reaction in the debt (percent GDP) specification using alternative estimation methods such as the two-step GMM, Prais-Winsten regression, bias-corrected FE, regression with Driscoll-Kraay standard errors, and FE (within) regression with AR(1) disturbances to validate the baseline results.

Chapter six contributes to the literature by empirically analyzing determinant factors of fiscal consolidation occurrence and examines the macroeconomic response of economic activity to a tight fiscal policy for SSA economies. Remarkably, this chapter identifies the determinant factors for fiscal consolidation occurrence. Second, it examines the effect of contractionary fiscal policy on private demand and unemployment. Third, it assesses whether the twin deficits hypothesis holds for SSA economies and examines whether the current account balance moves in the same direction as fiscal contraction. Fourth, it investigates how output responds to tightening fiscal policy through spending cuts and tax hikes. Fifth, it assesses whether consolidation effects vary with the state of the economy.

Unlike previous regional studies, this thesis addresses problems related to cross-sectional dependence, model misspecification, and time framework. In addition, we bridge the gap among regional researchers by estimating the coefficients of discretionary fiscal policy, fiscal sustainability, and effects of fiscal consolidation. Last but not least, this study will contribute to increasing the government's awareness of the dynamics of fiscal sustainability and how the economies respond to fiscal shocks and suggests a better solution to macroeconomic stability and sustainable public finances.

In tandem, the contribution of this study is, therefore, to provide a better understanding of the accurate relationship between discretionary fiscal policy and economic growth given the historical challenges confronting SSA countries, that are, significant social needs and wide-spread poverty in one side and increasing debt accumulation on the other side. Thus, by so doing, this thesis has important policy implications for enhancing sound fiscal policy in the region.

References:

Baharumshah, A.Z. - Soon, S.V. - Lau, E. (2017). Fiscal sustainability in an emerging market economy: When does public debt turn bad?. *Journal of Policy Modeling*, *39*(1), pp.99-113.

Mahdavi, S. - Westerlund, J., 2011. Fiscal stringency and fiscal sustainability: Panel evidence from the American state and local governments. *Journal of Policy Modeling*, *33*(6), pp.953-969.

Mendoza, E.G. – Ostry, J.D. (2008). International evidence on fiscal solvency: is fiscal policy "responsible"?. *Journal of Monetary Economics*, *55*(6), pp.1081-1093. https://doi.org/10.1016/j.jmoneco.2008.06.003

Phiri, A. (2019). Asymmetries in the revenue–expenditure nexus: new evidence from South Africa. *Empirical Economics*, *56*(5), 1515–1547. https://doi.org/10.1007/s00181-017-1397-0

https://doi.org/10.1057/palgrave.imfsp.9450029

Trehan, B. – Walsh, C.E. (1988). Common trends, the government's budget constraint, and revenue smoothing. *Journal of Economic Dynamics and Control*, *12*(2-3), pp.425-444. https://doi.org/10.1016/0165-1889(88)90048-6

Trehan, B. – Walsh, C.E. (1991). Testing intertemporal budget constraints: Theory and applications to US federal budget and current account deficits. *Journal of Money, Credit and banking*, *23*(2), pp.206-223. https://doi.org/10.2307/1992777

List of Publications

Peer-reviewed journal publications

1. **Woldu, G. T**., 2023. The asymmetric effect of fiscal policy on private consumption and investment over a business cycle: evidence from Sub-Saharan African countries. *Regional Science, Policy and Practice*: https://doi.org/10.1111/rsp3.12614
2. Somayeh Sedighi, Samaneh Raiss Shaghaghi & **Gabriel Temesgen Woldu**, 2021. Macroeconomic effects of fiscal policy shocks: Panel VAR evidence from MENA countries, *Macroeconomics and Finance in Emerging Market Economies*, 14 (3): https://doi.org/10.1080/17520843.2021.1995248
3. Woldu, Gabriel. 2021. ***Impact of Urbanization and Globalization on Environmental Quality in Mozambique: An ARDL Bound Testing Approach*.** The International Journal of Climate Change: Impacts and Responses 13 (2): 147-161. http://doi:10.18848/1835-7156/CGP/v13i02/147-161
4. Teka, A.M., **Woldu, G.T.** and Fre, Z., 2019. ***Status and determinants of poverty and income inequality in pastoral and agro-pastoral communities: Household-based evidence from Afar Regional State, Ethiopia*.** World Development Perspectives, p.100123. https://doi.org/10.1016/j.wdp.2019.100123
5. Gebresilassie, Y.H. and **Woldu, G.T.,** 2020. ***Determinants of Ethiopia's Livestock Exports: Analysis of Gravity Model of Trade.*** Abyssinia Journal of Business and Social Sciences, 5(1), pp.1-9. https://doi.org/10.20372/ajbs.2020.5.1.124

Book Chapter and Conference Proceeding

1. Fre, Z., **Woldu, G. T.**, Negash, N., Araya, S. T., Tsegay, B., M. Teka, A. M., Weldesilassie, B., Kenton, and Livingstone, J. (2022). Social protection for inclusive development in the Afar region of Ethiopia: Findings from the participatory rural appraisal. In Social Protection, Pastoralism and Resilience in Ethiopia: Lessons for Sub-Saharan Africa, Routledge. https://doi.org/10.4324/9781003203513-3

2. Fre, Z., **Woldu, G. T.**, and Livingstone, J. (2022). Social protection design and implementation in Ethiopia. In Social Protection, Pastoralism and Resilience in Ethiopia: Lessons for Sub-Saharan Africa, Routledge. https://doi.org/10.4324/9781003203513-9

3. **Woldu, G.T.,** 2021. Is the twin deficit hypothesis applicable in SSA countries? In: Proceedings of the 38th International Business Information Management Association (IBIMA): Innovation management and sustainable economic development in the era of global pandemic. Proceedings of the IBIMA conference. IBIMA Publishing, Sevilla, pp. 27- 34.(2021) ISBN 9780999855171. https://ibima.org/accepted-paper/is-the-twin-deficit-hypothesis-applicable-in-ssa-countries/

Conference Presentations

1. Woldu, Gabriel. 2021. Is there a debt-threshold effect on GDP growth in South Africa? In the Fifth Nordic Post-Keynesian Conference: 27 - 29 APRIL 2022, AALBORG UNIVERSITY, Denmark. https://www.business.aau.dk/research/mamtep/pkconference/
2. **Woldu, Gabriel**. 2021. Empirical test of the Ricardian Equivalence Hypothesis in Sub-Sahara African Countries. In the 18th INTERNATIONAL CONFERENCE ON FINANCE AND BANKING: 6 - 7 October 2021, Silesian University, School of Business Administration, **Karviná**, **Czechia.**
3. **Woldu, Gabriel**. 2021 (virtual). Searching for non-linear effects of fiscal policy on consumption and investment evidence from Sub-Saharan Africa (SSA) countries. In the 12th Annual Financial Market Liquidity Conference **Budapest**, **Hungary**, 11th-12th November 2021. https://www.uni-corvinus.hu/contents/uploads/2021/11/book_of_abstracts%20(1).f33.pdf
4. **Woldu, Gabriel**. 2021 (virtual). Impact of Urbanization and Globalization on Environmental Quality in Mozambique: An ARDL Bound Testing Approach. The 2021 Annual Conference of Development Studies Association Ireland (DSAI), November 11th-12th, **Ireland, UK.** https://www.dsaireland.org/assets/files/pdf/1636712634864914151.pdf
5. **Woldu, Gabriel**. 2021 (virtual). Do fiscal regimes matter for fiscal sustainability in South Africa?: A Markov-switching approach. EMNES ANNUAL CONFERENCE 2021. **Barcelona, Spain**. https://conference2021.emnes.org/

6. **Woldu, Gabriel**. 2019. Determinant factors of Biogas Technology Adoption for Household Energy Use and Its Challenges: Evidence from Eastern Zone of Tigray, Ethiopia. In: Kaya, M. Veysel; Chodnicka-Jaworska, Patrycja (eds.) 15th RSEP International Conference on Economics, Finance & Social Sciences Conference Proceedings Book of Abstracts. Roma, **Rome, Italy**: Review of Socio-Economic Perspectives, (2019) p. 16. https://rsepconferences.com/wp-content/uploads/2019/12/Rome-Book-of-Abstract-Completed.pdf