Innovations

Fiscal Dominance and Monetary Policy Effectiveness in Sub-Saharan Africa: A Focus of Public Debt Service Payment

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Abstract: *This study examined effect of fiscal dominance on monetary policy effectiveness in 48 Sub-Saharan African countries, with focus on public debt service payment covering the period 1974-2023. The datawas collated from World Development Indicator and the Panel ARDL technique was employed to analyze the data. The findings showed that debt service payment and government debt, controlled by inflation, real interest rate and exchange rate, were positive and significant function of fiscal dominance. Based on the result, the study recommends among others, that monetary authorities in Sub-Sahara Africa should prioritize reducing debt service payments to mitigate the risk of fiscal dominance. Secondly, monetary authorities in SSA should adopt a more moderate nominal interest rate to cushion the impact of inflationary shocks on real interest rates. Thirdly, monetary authorities in SSA should implement a prudent and balanced fiscal strategy that reduces dependence on monetary financing for government spending.*

Keywords: *Fiscal dominance, monetary policy effectiveness, government debt, inflation*

1.0. Introduction

Fiscal dominance occurs when the government's fiscal policy constraint the central bank's ability to achieve its monetary policy objectives. Usually, fiscal and monetary policies are to be coordinated towards achieving macroeconomic objectives in an economy whether developed or developing. This coordination is understood to imply that, these macro-economic policies have their peculiar characteristics and are aimed at achieving specific macroeconomic objectives (Ayinde and Bankole, 2021).

Conventionally, the monetary authorities are saddled with the single mandate of price stability, while the attainment of other macroeconomic objectives are achieved largely through the use of fiscal policies. In developing economies such as sub-Saharan African countries, the monetary authorities have dual mandate, and consequently, the monetary and fiscal policies are always interacted towards achieving the set of macroeconomic objectives desired at any given time including monetary policy effective implementation. This posed larger roles on fiscal policies towards the attainment of macroeconomic objectives. The implication is that; the economy has to be stimulated with the use of fiscal stimulus from time to time. It is this need to continually strengthen the economy and make it sustainable that have imposed serious consequences on the fiscal balances of the economy.

Primarily, high domestic savings and sound economic performance are considered too indispensable to measure economic stabilization. In Sub-Saharan Africa (SSA), savings is low and the economic is characterized with a very huge downturn. Due to low saving habits, governments have continually accumulated debt both domestic and foreign, as sources of financing government projects and other humanitarian issues such as wars. Moreover, because of the slow economic performance and the non-competitive nature of the economies of sub-Saharan African countries, debt accumulation has become a cheap source of capital for financing macroeconomic objectives.

Most higher inflation rate, fueled by increasing lots of debts required a reduction in the nominal rate of interest that the fisher's effect can be obtained. A reduction in the interest rate suggest that there would be outflow of capital due to portfolio adjustment of investors. Consequently, the exchange rate would depreciate due to excessive capital outflow. All these implies that monetary policies would become dormant while fiscal policies become dominant. This is the case in Sub-Saharan Africa (SSA), a region where fiscal dominant has become a recurrent trend as a result of fiscal deficit financing.

But, despite the importance of central bank lending, in practice, the academic literature has not given much attention to fiscal dominance, either in Sub-Saharan African (SSA) or other regions. Previous studies reflect the declining importance of central bank financing of government deficits in advanced economies over the past few decades. It is against this backdrop that this study seeks to examine fiscal dominance and monetary policy effectiveness in Sub-Saharan Africa (SSA), covering 48 Sub-Saharan African countries. The main objectives of this study was to examine the effect of fiscal dominance on monetary policy effectiveness in Sub-Saharan Africa (SSA).

2.0 Fiscal dominance and public debt service payment

The level and structure of an economy's debt, especially if denominated in foreign currency, can undermine the central bank's ability to pursue its policy objectives.

This section recalls the channels that appear most relevant for Africa. The first channel works through foreign currency debt levels and implied currency mismatches. For foreign currency debt, financial conditions depend directly on the monetary policy of the country issuing the relevant currency, in the case of SSA, mostly the US dollar, but also the euro. Higher interest rates in the United States and the euro area, therefore, tighten financing conditions and put pressure on domestic currencies. Depreciating local currencies might also give rise to vulnerabilities in sectors in which foreign currency assets or revenues are insufficient to match foreign currency liabilities. This may be an issue for some banks in SSA (the banking sectors in The Gambia and Rwanda, for example, had small negative net open foreign exchange positions in 2017).

In countries with substantial foreign investors participation in domestic currency markets (eg Ghana, Nigeria, South Africa and Zambia), depreciating local currencies may also induce unhedged foreign investors to repatriate investments to limit valuation losses in their home currency (Bruno and Shin, 2015). More broadly, high external debt makes domestic borrowers more vulnerable to swings in market sentiment. When external financial conditions tighten, and the exchange rate comes under pressure, the central bank may face a difficult balancing act, between attempting to limit exchange rate depreciation and capital outflows, on the one hand, and containing borrowing costs, on the other. The second channel works primarily through domestic currency debt levels. Changes in policy rates have a larger impact.

The higher the policy rates, the higher the level of domestic debt. Central banks may come under greater pressure to keep interest rates lower than warranted and to ease the refinancing burden, or even to cover funding needs directly via loans or bond purchases. While central bank funding of the government has increased in some regions and contributed to a decline in reserves, it has rarely triggered inflation bursts. Counter-examples are Zimbabwe during 2008–09 and South Sudan in 2016. Across the region, monetary policy frameworks have generally been strengthened (for example, by introducing inflation targeting) and many countries have implemented limits to curb direct deficit financing.

2.2 Theoretical framework and empirical review

The theory upon which this work was anchored on is the Fiscal Theory of Price Level which developed by Robert Barro and Joseph Redlick in 1995. The theory states that the long-run price level is determined by the present discounted value of primary government spending. According to the theory, the apex bank is traditionally assigned the function of price control. Thus, fiscal dominance can lead to higher government spending and a higher price level, which may affect exchange rate stability in the long run. This role draws naturally from the quantity theory of money, publicized by Friedman's famous proclamation of inflation being a monetary

phenomenon (Ayodele & Falokun, 2003). The fiscal theory of the price level (FTPL) opposes this, arguing in favor of price level varying with fiscal authority's budgetary policies (Woodford, 1998; Sims, 1994).

Other supporting theories relevant to the study were the Taylor principle and Ricardian equivalence theory. The Taylor principle is a monetary policy targeting principle proposed in 1992 by American economist, John B. Taylor. The principle states that when inflation rises, the real interest rate should be increased. The idea is that the nominal interest rate should be raised "more than point – for – point to cool the economy when inflation rises, so that the real interest rate increase has become a central tenet of monetary policy. The Principle considers the Central Bank funds rate, the price level and changes in real income. According to Taylor, monetary policy is stabilizing when the nominal interest rate is higher/lower than the increase/decrease in inflation (Taylor, 1993). Thus, the Taylor Principle prescribes a relatively high interest rate when actual inflation is higher than the inflation target.

Going further, the Ricardian equivalence theory developed by David Ricardo in the early 19th century proposes that people will save based on their expectation of increased future taxes to be levied in order to pay off the debt and that, this will offset the increase in aggregate demand from the increased government spending (Ricardo, 1934). The relevance of these theories are in line with the specific objectives of the study to examine the effect offiscal dominance on inflation, real interest rate, broad money growth, exchange rates, debt service payment and government debt in sub-Sahara Africa.

On the empirical front, several studies have been carried out to examined the effect of fiscal dominance on monetary policy effectiveness with either mixed or contradicting findings, for instance, Resende, (2007), reports a positive correlation between fiscal and monetary variables, from 1948 to 2005, employing vector autoregressive approach. Findings from the study revealed that the central banks are not obliged to finance government debt, if not all are funded by fiscal minuscule influence on price. Using the panel vector error correction mechanism, Tanner and Ramos, (2002), examined the relationship between fiscal dominance and monetary dominance in Brazil, between 1951 and 1995. Results from the study revealed that, a monetary dominance regime gives a more plausible explanation of the impulse responses of liabilities than fiscal dominance regime.

Similarly, Hooley et al, (2021), examined fiscal dominance in Sub-Saharan Africa, from 2001 to 2017, employing dynamic panel model, using Arellano Bond Generalized method of moments (GMM). Findings revealed that although legal limits have been frequently breached, they have posed a constraint, analogous to a speed limit. It was further revealed that legal limit is often exceeded. Findings also showed that the more availability of financing options, the less central bank financing is used. Ayinde and Bankole, (2021), examined fiscal dominance and exchange rate stability in Nigeria, between 1981q1 and 2018q4, using structural

vector auto-regression (SVAR) and Autoregressive Distributive Lag(ARDL). Findings indicate that both public debt and budget deficit have destabilizing effect on exchange rate in Nigeria.

However, Meltiz (1997) evaluated the nexus between fiscal policy and contractionary monetary policy in fifteen European Union countries and some OECD countries for the period between 1960 and 1995.Contrary to the previous results, this study confirmed the evidence of monetary policy dominance in those selected countries. Mehdi and Reza, (2011), also examined the relationship between fiscal deficit and inflation in Iran between 1980 and 2009. Finding from this study showed that fiscal deficit leads to inflation in Iran during the study period. Shaheen (2018) tested for fiscal dominance in Pakistan using Structural VAR from 1977-2016. The findings of the study showed a positive significant relationship between real primary deficit (primary balance) and real primary liabilities for the entire sample period.

Furthermore, John (2013) examined the nexus between Budget Deficit – inflation in South Africa between 1980 and 2012. The study employed vector Autoregressive distributive model as estimation technique with secondary data extracted from relevant sources. The study showed both long and short run relationship between budget – deficit and Inflation. The causality runs from budget to inflation. Both the impulse response function and Variance decomposition results showed that budget Deficit was inflationary in South Africa between 1990 and 2010. The results from the study showed that the effect was mostly responsible for by low degree of Central Bank independence and financial market development.

In Nigeria, Joseph and Oluwafemi (2018) empirically analyzed the fiscal dominance and the conduct of monetary policy from 1986 to 2016 employing the vector error correction (VECM) estimation. The study revealed that budget deficit, domestic debt and money supply had a non-significant impact on inflation in the long run, while budget deficit and domestic debt exert significant impact in the short-run. Additionally, Afolabi and Atolagbe (2018) investigated fiscal dominance and monetary policy in Nigeria, using the vector error correction mechanism (VECM) and co-integration techniques from 1986 to 2016. The results showed that domestic debt, budget deficit and money supply indicate no significant effect on average price level despite domestic debt and budget deficit having significant explanatory powers on money supply.

Based on the review of relevant literature, most of the investigated studies only approached the drivers of monetary policy effectiveness from a micro-theoretical perspective. This imply that they have given much attention to country specific studies of fiscal dominance and monetary policy effectiveness. This study differs completely from those studies by ensuring that the investigation captures the effect of fiscal dominance on monetary policy effectiveness with a focus on public debt service payment in almost the entire Sub-Saharan African countries in a macro-theoretical perspective.

3.0 Research methodology

Given the fact that data on fiscal dominance are already in the public domain and macroeconomic variables are also reported, the best design for a study of this nature will be the ex-post facto research design, which according to Onwumere (2019) is an after-the-fact kind of research design. The study employed secondary data that are longitudinal in nature with the dataset covering 48Sub-Saharan African countries extracted from two major sources - the World Development Indicators (WDI) and the International Monetary Fund's Global Financial Development Database (GFDD) from 1974 – 2023.

Model specification

Following from the work of Barro and Redlick (1995), the model to explain the relationship between fiscal dominance and monetary policy effectiveness with a focus on public debt service is specified in its functional form as:

$$FD = f(EDS, CGD, CPI, RIR, OER) \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (i)$$

Where: FD = Fiscal Dominance and EDS = External Debt Service, CGD = Cumulative Government Debt, CPI = Consumer Price Index, RIR = Real Interest Rate,OER= Official Exchange Rate.By applying the panel-ARDL estimation technique, the model is specified in its econometric form as:

$$\begin{aligned} \log FD_{it} = \alpha_0 &+ \sum_{k=1}^{n} \alpha_1 \Delta \log FD_{1t-1} + \sum_{k=1}^{n} \alpha_2 \Delta \log CPI + \sum_{k=1}^{n} \alpha_3 \Delta \log RIR_{1t-1} + \sum_{k=1}^{n} \alpha_5 \Delta \log OER_{1t-1} \\ &+ \sum_{k=1}^{n} \alpha_6 \Delta \log EDS_{1t-1} + \sum_{k=1}^{n} \alpha_7 \Delta \log CGD_{1t-1} + \partial_1 \log FD_{1t-1} + \partial_2 \log CPI_{1t-1} \\ &+ \partial_3 \log RIR_{1t-1} + \partial_5 \log OER_{1t-1} + \partial_6 \log EDS_{1t-1} + \partial_2 \log CGD_{1t-1} \\ &+ \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots (iii) \end{aligned}$$

The ARDL model is to basically ascertain the long and short run connection between fiscal dominance and monetary policy effectiveness in Sub-Saharan African countries. The ARDL method has many benefits when compared with other co-integration techniques and can be used notwithstanding if the underlying variables are wholly I(0), I(1) or jointly co-integrated, and can also be estimated with little sample features.

4.0 Analysis and discussion of findings

This section begins with the presentation of the unit root analysis; to ensure that the results are without spuriousness given the time series properties in panel data, a summary of the panel unit root test is reported in table 1.

Table 1. Summary of Panel Unit Root Test

	LLC	Breitung	IPS	ADF Fisher	PP Fisher	Inference
CGD	-28.60	-18.49	-25.24	715.17	1560.8	I(0)
EDS	-20.53	-16.61	-24.0694	680.088	1484.31	I(0)
CPI	-20.25	-10.27	-25.48	738.07	1466.3	I(0)
OER	-29.43	-17.65	-24.99	707.19	1322.62	I(0)
RIR	-26.38	-16.30	-28.00	813.75	1698.16	I(0)

Source: Authors' computation from E-views 10, 2024

As observed, all the variables are integrated of order one (0) implying that stationarity exist in all the panel series at levels. This justifies the use of traditional panel estimators of fixed and random effect. The condition for the use of the static panel is level series stationarity of the dataset.

4.1 Panel model estimation and Haussmann test

To test the working hypotheses, the results of the estimated models the fixed and random effect result was carried out with the relative result of the Haussmann tests.

Table 2: Haussmann Test

Cross-section random		Chi.sq. d.f Statistics	Chi-Sq. d.f	Prob
		1.005676	4	0.9089
Variable	**Fixed**	**Random**	**Varr(Diff.)**	**Prob.**
EDS	-0.062	-0.063	0.00	0.7719
OCD	0.057	0.057	0.00	0.6856
CPI	-0.072	-0.072	0.00	0.7986
RIR	0.772	0.772	0.00	0.4767
OER	0.034	0.034	0.00	0.3768

Source: Authors' computation from E-views 10, 2024

Based on the outcome of table 2, the insignificant result of the Haussmann test is evidence in favour of the preference of the random effect model over the fixed effect estimates.

Table 3: Panel Random Effect Result
Dependent variable: Fiscal Dominance

Variable	Coefficient	Std. Error	t-Statistics	Prob.
C	3.88945	0.18833	20.6523	0.0000
EDS	0.00729	0.00257	20.2301	0.0047
OCD	0.06294	0.00438	14.3454	0.0000
CPI	0.05797	0.00372	15.5610	0.0000
RIR	0.07278	0.00589	12.3385	0.0000
OER	0.77207	0.00702	109.925	0.0000
R-squared	0.8639		F-stats	292.44

Source: Authors' computation from E-views 10, 2024

In the model, with real interest rate, exchange rate and inflation as control variables, and public debt service payment and government debt as the core explanatory variable using the random effect estimates, it is found that debt service payment is a positive and significant function of fiscal dominance. A unit increase in fiscal dominance increases debt service payment by 0.007% implying that as there increase in public borrowing and predominant deployment of other fiscal instruments, debt service payment rises by 0.007% for every unit increase in the SSA fiscal space. Fiscal dominance is characterized by excessive borrowing hence increase in debt service payment will necessarily result from high debt profile. The null hypothesis is rejected, and the alternate accepted with the conclusion that fiscal dominance had a significant and increasing impact on debt service payment in SSA within the investigated period. Makoto and Ndedsu (2012) made a findings similar to that of this study employing VAR model to investigate deficit financing on inflation in Zimbabwe. The finding revealed that central bank financing of government deficit is highly inflationary under excess central bank lending.

The result also shows that fiscal dominance positively and significantly affected government debt in the SSA countries investigated within the period. The null hypothesis is rejected, and the alternate accepted with the conclusion that fiscal dominance had a significant increasing effect on government debt in SSA within the investigated period. This finding is not in line with the finding of Kumhof, Nuners and Yakadina (2010) on fiscal monetary rules under fiscal dominance, employing panel least squares, with the findings revealing that fiscal dominance has a negative effect on government debt. Furthermore, inflation proxied by consumer price index showed a positive and significant function of fiscal dominance. Thus, the null hypothesis is rejected, and the alternate accepted with the conclusion that fiscal dominance led to increase in inflation in SSA within the investigated period. This finding is in line with fiscal theory of price level, with the believe that fiscal dominance can lead to higher government spending and higher price level, which may affect exchange rate stability in the long run. This role draws naturally from the

quantity theory of money, published by Friedman's famous proclamation of inflation being a monetary phenomenon (Ayodele & Falokun, 2003).

In addition, real interest rate was found to be positive and significant on fiscal dominance. Therefore, a unit increase in fiscal dominance increases real interest rate by 12% implying that as there increase in public borrowing and predominant deployment of other fiscal instruments, interest rate rises by 12% for every unit increase in the SSA fiscal space. This finding is in line with Taylor principle of stability inflation which requires higher real interest rate in response to higher inflation. Lastly, the null hypothesis that fiscal dominance led to an increase in exchange rate in SSA within the investigated period was rejected, and the alternate accepted with the conclusion. This finding is in line with the work of Ayinde and Bankole (2021) on fiscal dominance and exchange rate stability in Nigeria, employing structural vector auto-regressive (SVAR) and Auto-Regression Distributed Lag (ARDL), with the findings indicating that both public debt and budget deficit have destabilizing effect on exchange rate in Nigeria.

5.0 Conclusion and recommendations

This study adopted the Panel ARDL technique to investigated the effect of fiscal dominance on monetary policy effectiveness in SSA countries with a focus on public debt service payment covering the period 1974 to 2023. The study adopted three variants of panel-ARDL as suggested by Pesaran Shin and Smith (1999) namely mean group, pooled mean group and dynamic fixed effect. The study showed the reaction of monetary policy effectiveness to the effect of the individual fiscal dominance. Effects from fiscal dominance show positive and significant effect on debt service payment, government debt, inflation, real interest rate, and exchange rate. Additionally, the paper revealed that in the international space, the effects of fiscal dominance on the SSA fiscal space, using exchange rate, real interest rate, debt service payment and government debt are positive and significant with fiscal dominance. Overall, the paper concludes that the effectiveness of monetary policy is not only a monetary policy issue, but also fiscal policy through fiscal dominance if not properly managed and implemented. This is evidenced in the fragile nature of SSA economies and the aggressive fiscal dominance in the management of the region's economy.

Based on the findings of the study, the following recommendations were made; Firstly,monetary authorities in Sub-Sahara Africa should prioritize reducing debt service payments to mitigate the risk of fiscal dominance.Secondly, monetary authorities in SSA shouldadopta more moderate nominal interest rate to cushion the impact of inflationary shocks on real interest rates. Thirdly, monetary authorities in SSA should implement a prudent and balanced fiscal strategy that reduces dependence on monetary financing for government spending.Fourthly, monetary authorities in SSA should implement proactive exchange rate management

strategies that foster a favorable exchange rate regime, mitigating the negative impacts of fiscal dominance. Lastly, monetary authorities in SSA can reduce the risk of a shift to fiscally-dominance regime by responding more moderately to inflation in normal times.

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