Fiscal Deficit Sustainability and Fiscal Policy Persistence In The West African Monetary Zone

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ABSTRACT

The Economic Community of West African States launched the name of its proposed currency, eco, in June, 2019 for its proposed monetary union. The Regional body stipulated certain convergence criteria to be met before member countries could be admitted to the proposed union. One such criteria is that the budget deficit-to-Gross domestic product ratio be less than or equal to three percent. Available data for the past two decades indicate the non-compliance of many of these West African countries to this condition despite having control over both fiscal and monetary policies. This study investigates the sustainability of fiscal deficits in a group of six countries known as the West African Monetary Zone. This study has two objectives: First, to investigate the sustainability of deficits in the West African Monetary Zone and secondly, to examine the absence or presence of fiscal policy persistence. Fiscal deficits are sustainable when an increase in public debt is associated with a corresponding increase in the primary surplus. Using panel data, a fiscal reaction model was estimated. The findings of this study showed that deficits are weakly sustainable and fiscal policy is highly persistent. The implication of weak sustainability is that they are easily vulnerable to external shocks and the possibility of becoming unsustainable is very high. Meanwhile, a highly persistent fiscal policy leaves little or no room for fiscal policy discretion and this is a high risk because it means government won't respond swiftly as at when due. Based on these findings, the study recommends a suspension of the proposed single currency union.

1. Introduction

The West African Monetary Zone (WAMZ) was established in April, 2000. It is made up of 6 countries namely Gambia, Ghana, Guinea, Liberia, Nigeria and Sierra Leone. Establishment of the zone was part of fast-track measures aimed at promoting regional and economic integration for the whole of West Africa under the leadership of the Economic Community of West African States (ECOWAS). The West African Economic and Monetary union (WAEMU) also known in French as *Union economique et monetaire ouest-africaine* (UEMOA) was founded in January 1994 and is made up of 8 French-speaking states within the ECOWAS namely Benin, Burkina Faso, Côte d'Ivoire, Guinea-Bissau, Mali, Niger, Senegal, and Togo. They are former territories of French West Africa. They share a customs union and the same currency, the CFA franc, which is pegged to the euro (IMF, 2017). WAEMU, also under the leadership and supervision of ECOWAS, was created to promote economic integration among countries that share the CFA franc as a common currency.

ECOWAS is working towards the formation of a monetary union for the whole of West Africa. The regional body hopes to bring together both the WAEMU and the WAMZ with the intention of having a single currency for all. In June, 2019, the name of the single currency to be used, called *eco* was launched. Before now, six macroeconomic convergence criteria had been set out for all members to meet. Four of the criteria are regarded as primary while two are regarded as secondary. The primary criteria include: (1) Overall deficit to Gross Domestic Product (GDP) ratio should be less than or equal to 3% (2) Average annual inflation rate should be less than or equal to 10% and a target of less than or equal to 5% by end of 2019 (3) Central bank financing of the budget deficit should be less than or equal to 10% of previous year's tax revenue (4) Gross external reserves should be greater than or equal to 3 months of import cover. The secondary criteria are: (5) Total public Debt to GDP ratio should be less than or equal to 70%. (6) Nominal exchange rate variation should be within the plus or minus 10% range. (ECOWAS, 2017).

In order to better understand the theory of fiscal policy sustainability (also known as fiscal deficit sustainability), it is necessary to discuss budget deficit and the views of various schools of thoughts. Budget deficit refers to the amount of money by which government expenditure exceeds revenues on a yearly basis. According to the Classical Economists, budget deficit has the tendency of leading to crowding out effect. This is so because they believe it leads to increase in government and consumer spending, reduction in savings, an increase in interest rates and consequently, a fall in investments. For this reason, Classical Economists say that budget deficit has negative effects on the economy and they are not in support of it.

Keynesian Economists' view differs from those of the Classicals. They believe that deficits do have beneficial impact on the economy. Starting from an economy that is yet to attain full employment, deficits help stimulate aggregate demand and consumption. This leads to an increase in national income without negatively affecting savings or investment. The Ricardian view is that deficits do not seem to have any impact on the economy. They believe that deficit spending now is just a way of moving tax collection to the future. As one of their assumptions, individuals are forward looking, and so they know that whatever increase is witnessed in their disposable income now is temporary. Such income rise would eventually be taxed later in the future. So they do not increase their spending but rather they save. Therefore, the deficits leave aggregate demand and output unchanged.

The theory of fiscal sustainability states that fiscal deficits are sustainable once the intertemporal budget constraint is satisfied. The intertemporal budget constraint refers to the condition in which the current level of the debt stock in the economy is made equal to the present value of future fiscal surpluses. Due to this imposed constraint, economies are not free to accumulate debts for an unlimited period of time because if they do, the market will perceive the risk of insolvency and liquidity crises (Carrion-i-Silvestre, 2016). A violation of the intertemporal budget constraint would indicate that the fiscal policy in unsustainable because it means debts would explode at a rate higher than the economic growth rate.

The literature is filled with various studies that have tried to measure fiscal deficit sustainability which satisfies the intertemporal budget constraint. The two most prominent approaches used to study and analyze fiscal sustainability are the Accounting approach and the Present Value Budget constraint (Econometric) approach. The Accounting approach usually involves the use of sustainability indicators like the debt-to-GDP ratio, the debt-to-export ratio and the total revenue-to-GDP ratio. The Present value Budget constraint approach, introduced by Hamilton and Flavin (1986), requires the econometric testing of the present value budget constraint or of the No-Ponzi Game (NPG) condition for a set of time series data including government expenditure, government revenue, deficits and/or debts. This entails the use of stationarity and cointegration tests. The NPG condition requires that the present value of public debt stock goes to zero in the limit. This condition rules out the possibility of government issuing new debt to finance its deficit. While some studies adopted the univariate approach which entails tests of stationarity of deficits (see Hamilton & Flavin, 1986; Trehan & Walsh, 1988, 1991) or tests of stationarity of public debt stock (see

Kremers, 1988; Wilcox, 1989); others have adopted the multivariate approach.

The multivariate approach requires carrying out a test of cointegration between government expenditure and government revenue (see e.g. Afonso & Jalles, 2012; Fountas & Wu, 1996; Hakkio & Rush, 1991, Hatemi-J, 2002; Olekalns, 2000; Payne 1997) or cointegration test between fiscal deficit and government debt (see e.g. Bohn, 2005; Hamilton & Flavin, 1986; Prohl & Schneider, 2006). In the case of conducting a test of stationarity of the debt-to-GDP ratio, the decision rule is that if the debt-to-GDP ratio is not stationary, it means debts are not sustainable hence, fiscal policy becomes unsustainable. However, if they are stationary, then it means fiscal deficit is sustainable. With tests of cointegration of government expenditure and revenue, the decision rule is that if both variables are cointegrated, then fiscal deficit is sustainable in the long run; otherwise not sustainable.

Later on, scholars began to realize the importance of taking structural changes into consideration and this was included in their sustainability analysis (see e.g. Afonso, 2005; Bohn, 2005; Jayawickrama & Abeysinghe, 2006; Jha & Sharman, 2004; Martin, 2000; Quintos, 1995; Westerlund & Prohl, 2010). Fiscal sustainability was also classified as being strong or weak; the closer (farther) the coefficient of debt to one, the stronger (weaker) the sustainability.

The relationship between the primary fiscal balance and the public debt, each expressed as a ratio of the Gross Domestic Product (GDP) is a vital indication of whether fiscal deficits are sustainable or not. Bohn (1998, 2007) came up with a model-based approach to fiscal deficit sustainability known as the fiscal policy reaction function. Based on his model, he recommended that there be a positive response from government, in the form of a rise in the primary surplus to address the worsening debt position.

Therefore, a rise in primary surplus in response to a rise in debt stock is a sufficient condition for fiscal deficit sustainability. Fiscal deficit sustainability is about government being able to meet their debt obligations. A brief look at the literature shows that empirical studies have been conducted around the world to assess fiscal sustainability. The findings vary and some factors observed to be responsible for this variation include the methodology used, the time span and the frequency of the data set. Studies that have used the fiscal reaction function to analyze developing countries, developed countries and emerging economies include Mendoza and Ostry (2008), Mauro, Romeu, Binder and Zaman (2013), and Afonso and Jalles (2017). Afonso and Jalles (2014) carried out unit root and structural break tests and arrived at the same conclusion. Cevik and Teksoz (2014) used the generalized method of moments (GMM) estimator for a panel of developing and developed countries. What they found was that, as public debt rose, fiscal behavior changed rapidly.

Fiscal deficit sustainability was carried out individually and as a panel for countries in the European Monetary Union (EMU) (e.g., Afonso & Rault, 2010; Claeys, 2007; Collignon, 2012). Results were all similar. When analysed as a group, the EMU countries were fiscally sustainable but when analysed individually, not all countries were sustainable. Checherita-Westphal and Zdarek (2017), Baldi and Staehr (2016) reported evidence of fiscal sustainability in the EMU countries as a panel. Country-specific studies which assessed fiscal deficit sustainability and found them sustainable include Sriyana and Hakim (2017) for Indonesia; Tronzano (2017) for Poland; Budina and Van Wijnbergen (2008) for Turkey; Jha and Sharma (2004) for India; De Mello (2008) for Brazil; Burger and Marinkov (2012) for South Africa; Asiama, Akosah and Owusu-Afriyie (2014) for Ghana; Oyeleke and Adebisi, 2014 for Nigeria.

Fiscal and monetary policies together comprise the two main tools used by governments to stabilize economic activity. Economic policy is more effective when these two are used simultaneously in the same direction. But the options for monetary policy to impact the economic activity becomes limited when either there is a fixed exchange rate regime or a country chooses to abandon the opportunity of manipulating national currency by joining a monetary union or the interest rates hit the zero lower bound. Thus, governments mainly turn to fiscal policy to intervene in the economic process (Aygun & Gulzar, 2017). In a monetary union, monetary policy will be formulated and implemented by a supranational Central Bank while individual member countries utilize national fiscal policies only.

A basic ingredient for the success of the proposed ECOWAS monetary union is for member countries to be fiscally disciplined and implement prudent national fiscal policies and sustainable fiscal deficits. To help achieve this and prepare the countries for what's to come, macroeconomic and fiscal convergence criteria were put in place. However, a look at the laid down macroeconomic and fiscal convergence criteria to be met by all countries showed an unimpressive result. None of the countries satisfied all criteria consistently for the period 2001 – 2018. For example, in the convergence criteria, the ratio of fiscal deficit to GDP should not be more than 3%. In 2007, Liberia had a fiscal deficit of 12.2%, 6.36% in 2010 and 4.10% in 2017. In 2002, Gambia had a deficit of 9.1%, 11.4% in 2011 and 3.90% in 2017. An inflation rate of 10% is stipulated as the target but all countries were unable to achieve this. Nigeria had an inflation rate of 16.5% in 2001, 10.3% in 2011 and 16.5% in 2017. For Ghana, it was 21.3% in 2001, 18.1% in 2008 and 12.37% in 2017. Also included in the convergence criteria is that the tax revenue should be equal to or greater than 20% of GDP. Guinea

had a tax revenue of 10.2% in 2001, 15.8% in 2011 and 8.2% in 2015. Sierra Leone had a tax revenue of 8.08% in 2002, 12.9% in 2011 and 10.5% (ECOWAS, 2017).

WAMZ countries have been known to have a long history of high fiscal deficits-to-GDP ratio, high public debts-to-GDP ratio, high levels of inflation, unemployment and macroeconomic instability. These problems have persisted despite the fact that these countries have had full control of both fiscal and monetary policy tools. What would happen if they give up control of their monetary policy?

When fiscal deficits become high and unsustainable, countries outside a monetary union find ways to deal with it by using their monetary policies and printing more currency. However, for countries in a monetary union, such a problem could lead to an insolvency crisis for the government and ultimately create a bigger problem for the union unless steps are taken to address it. Unfortunately, if such a country is bailed out, it also has the tendency of encouraging fiscal recklessness and profligacy among other members. This is why it becomes important to find out if fiscal deficits are sustainable in the WAMZ.

Thus the main research problem identified is that WAMZ countries have so far been unable to tackle their various economic problems despite having control over both fiscal and monetary policies and it would even be much more difficult for them in a monetary union unless they have strong fiscal deficit sustainability, fiscal policies and fiscal discipline. Meanwhile, fiscal deficits and public debts keep accumulating. Another problem is that when output (GDP) goes up, instead of these governments saving, they spend more; and when faced with economic depression, they have nothing to spend and end up borrowing again. Based on the International Monetary Fund's (IMF) Fiscal Rules Database, many of these countries lack fiscal rules and institutions capable of

instilling discipline; and in countries where they do have them, enforcement is weak, corruption is rife, leaders embezzle government funds, there is no respect for the rule of law and corrupt leaders go unpunished.

Results from fiscal sustainability studies on West African Monetary zone (WAMZ) member countries have been contradictory. While Oshikoya and Tarawalie (2010) found evidence of weak fiscal sustainability in all WAMZ member countries with the exception of Sierra Leone, Mohamed (2014) found evidence of sustainability in all countries except Liberia. Both Mohamed (2014) and Oshikoya and Tarawalie (2010) used the same methods, carrying out stationarity and cointegration tests using time series data. No study has used panel data yet for this analysis. This is one research gap this study hopes to fill.

The main objective of this study is to assess fiscal deficit sustainability in the West African Monetary Zone. A second objective is to determine the absence or presence of fiscal policy persistence and its likely impact on economic integration in the region. This study aims to make the following contributions to the literature. It would be the first study to assess fiscal deficit sustainability in WAMZ using panel data.

Secondly, the study makes use of a fiscal reaction function contrary to previous studies. The findings shall be of immense benefit to the ECOWAS policy makers as it shall help them in deciding whether or not to go ahead with the proposed single currency union for West Africa. It shall also highlight the challenges surrounding a persistent fiscal policy with a view to guiding the government on how best to avoid such.

The structure of the paper is as follows: Section 1 gives the introduction and a brief literature review while section 2 presents the materials and method used. Results obtained

are discussed in section 3, and Section 4 concludes the paper.

2. Materials and Methods

In order to evaluate fiscal deficit sustainability in the West African Monetary Zone (WAMZ), this study puts forward a conceptual framework upon which this objective shall be achieved. Key concepts identified in the literature include the primary fiscal balance as a ratio of the Gross Domestic Product (GDP), the ratio of public debt stock to GDP, political institutions, fiscal rules and countercyclical fiscal policy. The primary fiscal balance, which can either be a surplus or a deficit, is taken as our dependent variable. The primary balance is defined as the total revenue excluding grants minus total expenditure less all interest payments. The other variables are the explanatory variables. We expect that an increase in the public debt stock ratio should be matched with an increase in the primary surplus balance to GDP ratio. This would be an indication of fiscal deficit sustainability. The presence of fiscal rules should help to curtail government expenditure and borrowing from exceeding set limits. Fiscal rules are defined as those laws put in place to guide government's revenue and expenditure decisions. There are four basic fiscal rules and they are: expenditure rules, revenue rules, debt rules and balanced budget rules. Central government is expected to exercise the political will needed to reduce debt accumulation and deficits, and boost revenue generation.

Institutions are also important in explaining and ensuring fiscal sustainability. In this study, institutions are defined as the six components of the World Governance Indicators (WGI). The six components include Political stability and Absence of Violence/Terrorism, Rule of law, Control of corruption, Government effectiveness, Voice and Accountability and Regulatory Quality. Each indicator ranges from -2.5 (the lowest and least desired) to 2.5 (the preferred). A

Quality of Institutions (QI) indicator was derived by taking the mean of the six components of the World governance indicators (WGI). The quality of institutions indicator used is in line with the work of Aygun and Guzlar (2017).

Finally, we have the output gap as an explanatory variable which represents the business cycle. The output gap is defined as the difference between the actual GDP and the potential GDP. Potential GDP was obtained using the Hodrick-Prescott (HP) filter with λ=100. Having a high output gap indicates that the economy is operating below its optimum capacity and this requires government to increase spending to fix it. Such a policy is known as a countercyclical fiscal policy. Figure 1 is a flow chart illustrating the conceptual framework of this study.

To determine if a country's public finance is sustainable, one could use the univariate approach or the multivariate approach. The univariate approach involves tests of stationarity of deficits or stationarity of public debt stock. The multivariate approach requires carrying out cointegration test between government expenditure and government revenue or cointegration between fiscal deficit and public debt. In the case of conducting a test of stationarity of the debt-to-GDP ratio, the decision rule is that if the debt-to-GDP ratio is not stationary, it means debts are not sustainable hence, fiscal policy becomes unsustainable. However, if they are stationary, then it means fiscal deficit is sustainable.

With tests of cointegration of government expenditure and revenue, the decision rule is that if both variables are cointegrated, then fiscal deficit is sustainable in the long run; otherwise not sustainable. Some empirical studies conducted using the cointegration method include Hakkio and Rush (1991), Hamilton and Flavin (1986), Kremers (1988), Tanner and Liu (1994), Trehan and Walsh (1988, 1991).

In response to some challenges faced by earlier approaches to sustainability, Bohn (2007) investigated the various strategies used to test for fiscal sustainability. Unit root and cointegration tests for debt and/or deficit were found to be the most common in use at that time. He observed that with unit root testing, it was difficult to ever reject fiscal sustainability thereby making the test less reliable. Furthermore, using time series tests of stationarity do not clearly highlight the reactions of fiscal policy which are inherent in the data, making it difficult to identify the right fiscal policy to implement that will guarantee sustainability. He advocated the use of fiscal policy reaction functions as a better alternative to test fiscal sustainability rather than the weak restrictions imposed by the intertemporal budget constraint. Based on his model, a rise in primary surplus in response to a rise in debt stock is an indication of deficit sustainability.
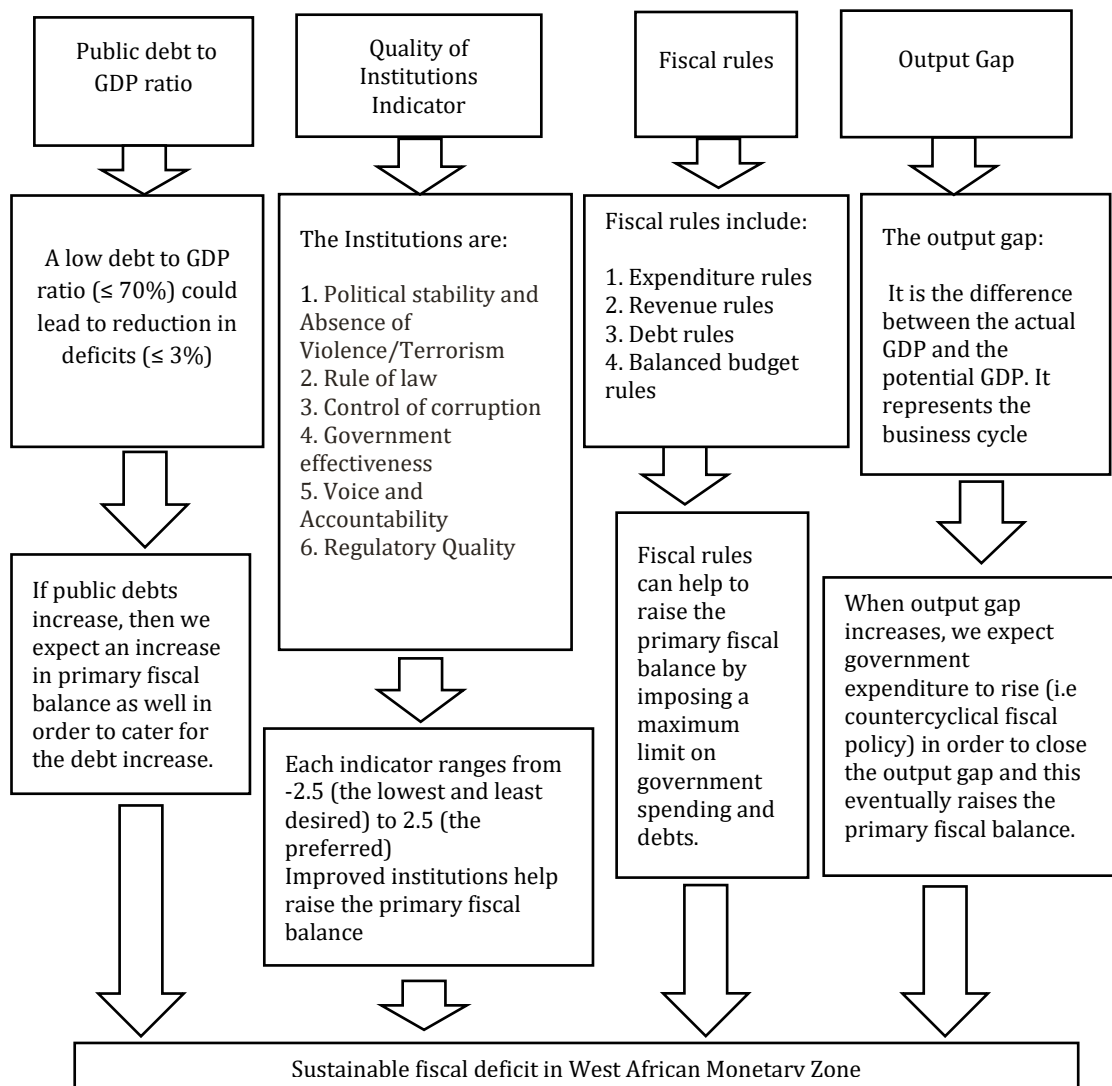

Figure 1. Conceptual framework for achieving fiscal deficit sustainability in WAMZ

Bohn's model based sustainability approach has been adopted in various studies (see e.g. Afonso & Jalles, 2012; Bohn, 1998; Carrion-i-Silvestre, 2016; Ghatak & Sanchez-Fung, 2007; Greiner, Koller & Semmler, 2004; Mackiewicz-Lyziak, 2015; Prohl & Schneider, 2006; Shastri, Giri & Mohapatra, 2017).

To achieve our objectives, the study adopted Bohn's (2007) fiscal reaction model with some modification and estimated it using the fixed effects estimator. In line with the literature and empirical studies, primary balance as a percentage of GDP was used as the dependent variable.

$$Pb_{it} = \alpha_i + \beta Deb_{it-1} + \gamma Gap_{it} + \varphi Pb_{it-1} + \psi Cab_{it} + \lambda Fr_{it} + \pi Ele_{it} + \Omega QI_{it} + \mathbf{X}_{it}\partial + \eta_i + \varepsilon_{it} \dots\dots\dots(1)$$

Equation 1 is the model estimated.

Where Pb_{it} is Primary balance as a percentage of GDP, Fr_{it} is fiscal rule dummy (it takes the value of 1 for the presence of a fiscal rule and 0 for otherwise), Deb_{it-1} is lag of Public debt as a percentage of GDP, Ele_{it} is election dummy (it takes the value of 1 during election year and 0 otherwise), gap_{it} is output gap which was computed using the Hodrick-Prescott (HP) filter with $\lambda=100$, QI_{it} is a quality of Institutions indicator which is derived by taking the mean of the six components of the World governance indicators (World Bank, 2019). These six components include Political stability and Absence of Violence/Terrorism, Rule of law, Control of corruption, Government effectiveness, Voice and Accountability and Regulatory Quality (World Bank, 2019). Each indicator ranges from -2.5 (the lowest and least desired) to 2.5 (the preferred). The quality of institutions indicator used is in line with the work of Aygun and Guzlar (2017). Pb_{it-1} is lag of dependent variable, Cab_{it} is current account balance as a percentage of GDP and $\mathbf{X}_{it}$ is a vector of control variables including trade openness and inflation rate. η_i is the unobserved country specific fixed effects, ε_{it} is a time and country specific error term.

Annual data for all the 6 member countries of the West African Monetary Zone (WAMZ) was sourced. It was a panel of 6 countries namely Gambia, Ghana, Guinea, Liberia, Nigeria and Sierra Leone for the period 2001-2018. The study chose to use the member countries of WAMZ because they are yet to be studied as a group. Furthermore, these countries are preparing to be a part of the proposed ECOWAS currency union and so it is only natural that they are chosen as a case study. Data was sourced from the West African Monetary Institute and ECOWAS convergence reports, International Monetary Fund Global debt database, World Economic Outlook and the Fiscal Rules dataset. The choice of 2001 was because the WAMZ was established in 2000.

2.1. The Fixed effects versus the Pooled OLS

In panel data analysis, the first step is always trying to decide whether to use the Pooled OLS, the Fixed Effects or the Random Effects estimator. If we use the pooled OLS method, it means we believe that the countries have no individual specific effects. However, when we use the fixed effects, it means we expect the countries of WAMZ to have individual specific effects in our regression. To decide between both methods, the study carried out a poolability test. Under the poolability test, the null hypothesis is that all the intercepts are the same (homogeneity) hence the pooled OLS method is used. The alternative hypothesis is that all intercepts are not the same (heterogeneity) hence the fixed effects method becomes applicable. The hypotheses are stated below:

Null hypothesis

H0: $\alpha1 = \alpha2 = \alpha3 \dots = \alpha N = 0$; $\lambda1 = \lambda2 = \dots = \lambda T = 0$

Alternative hypothesis

H1: $\alpha1 \neq \alpha2 \neq \alpha3 \dots \neq \alpha N \neq 0$; $\lambda1 \neq \lambda2 \neq \dots \neq \lambda T \neq 0$

The result of the poolability test is $F (21, 72) = 3.62$ with a $Prob > F = 0.0000$.

The null hypothesis of intercept homogeneity (pooling) is rejected at the 1% and 5% significance levels. Therefore, the fixed effects estimator is preferred over the Pooled OLS..

2.2. The Random Effects versus the Pooled OLS

To decide whether there are random effects in the model, the Breusch and Pagan Lagrangian multiplier (LM) test was conducted. The null hypothesis is that variances across the different countries is zero. This means that there is no significant difference across the countries (no panel effect) and no random effects. The alternative hypothesis is that the variances across the different countries is not zero; meaning there are random effects.

Null hypothesis   H0: Var (u) = 0

Alternative hypothesis   H1: Var (u) ≠ 0

The result of the Breusch Pagan LM test: Chi (2) value = 0.00 with a Prob > Chi (2) = 1.000

Going by the result, we cannot reject the null hypothesis (no random effects) and so we conclude that using the random effects estimator is inappropriate.

3. Results and Discussion

The results of both the poolability test and the Breusch Pagan LM test suggest that the most suitable estimator to use is the fixed effects estimator, which is in line with Checcherita-Westphal and Zdarek (2017). Fiscal sustainability is measured by the relationship between the public debt and the primary balance ratio. An increase in the primary balance in response to an increase in the public debt is an indication of fiscal sustainability.

In the baseline model results, lagged public debt as a percentage of GDP had a positive coefficient of 0.009 and it was statistically significant at the 5% significance level (p-value = 0.02). It means that for every 1 percentage point increase in public debt, primary balance improves by 0.009 percentage point, holding all other variables constant. This means that WAMZ countries exhibit very weak sustainability. The closer the coefficient of public debt is to one, the stronger is the fiscal sustainability and the closer it is to zero, the weaker it is. Similar results were reported by Baldi and Staehr (2016), Checcherita-Westphal and Zdarek (2017), Cordes, Kinda, Muthoora and Weber (2015), Daniel and Shiamptanis (2013), Debrun and Kinda (2017), Ghosh et al. (2013), Schoder (2014), Weichenrieder and Zimmer (2014).

The output gap had a negative and statistically significant coefficient of 0.002. The implication of this is that fiscal policy is pro-cyclical in the WAMZ countries because for every unit increase in the output gap, the primary balance decreases by 0.002 percentage point while holding other factors constant. The lag of the dependent variable had a positive coefficient, indicating fiscal policy persistence although it was not statistically significant. During election years, the primary balance goes down by 2 percentage points while holding all other factors constant. The evidence for this is in the negative coefficient of the election dummy. However, it was significant only at the 10 % significance level (p-value = 0.09). Current account balance as a percentage of GDP had a negative coefficient which was also statistically significant only at the 10% significance level. This means that a one percentage point increase in the current account balance leads to a 0.02 percentage point fall in the primary balance. This is rather unexpected. Had the current account balance been positive, it would have given support to the existence of the twin-deficit hypothesis in the WAMZ countries. In terms of the goodness of fit, the model had an R-squared value of 0.49.

To check the robustness of our results, the baseline model was extended through the addition of other explanatory variables. The results obtained from the extended models m1, m2 and m3 suggest that indeed our results are robust. The coefficients of our explanatory variables had the expected signs and only slight changes in the coefficient size. For example, the lagged public debt varied from 0.009 – 0.018. Some variables were significant only at the 10% significance level.

It is interesting to note that while all the newly added explanatory variables were insignificant, only one was significant. It was the quality of institutions indicator. For every one unit improvement in the quality of institutions (institutions such as Political stability, Control of corruption and respect for the rule of law), the primary balance jumps up by 3 percentage points while keeping other factors constant.

Table 1. Estimation results for the Basic fiscal reaction model and its extension, WAMZ, 2001-2018

Dependent variable: Primary Balance as a percentage of GDP				
	Base model	M1	M2	M3
Lagged public debt	0.009**	0.018***	0.013*	0.013*
	(0.002)	(0.001)	(0.005)	(0.006)
Output gap	-0.002**	-0.003***	-0.003***	-0.003***
	(0.001)	(0.0004)	(0.001)	(0.001)
Lagged primary balance	0.055	0.196		
	(0.146)	(0.130)		
Current account	-0.024*	-0.017*	-0.022*	-0.022*
	(0.012)	(0.007)	(0.009)	(0.009)
Election dummy	-2.050*	-1.453*	-1.943*	-1.946*
	(1.012)	(0.715)	(0.961)	(0.975)
Quality of Institution		3.127**	2.725	2.715
		(1.242)	(2.950)	(2.962)
Inflation rate		0.120	0.063	0.064
		(0.078)	(0.059)	(0.057)
Trade Openness			0.002	0.003
			(0.011)	(0.011)
Fiscal rule dummy				0.272
				(1.302)
Constant	-2.330	-1.250	-2.122	-2.275
	(1.263)	(1.178)	(2.149)	(2.089)
Observations	102	102	102	102
R squared	0.49	0.37	0.51	0.51
Country FE	Yes	Yes	Yes	Yes
Time FE	Yes	No	Yes	Yes

Source: Author's calculation, 2020. Notes: P-values ***p<0.01, **p<0.05, *p<0.1: means variable is statistically significant at the 1%, 5%, and 10% level respectively. Country fixed effects and time fixed effects results are not reported, robust standard errors are given in brackets.

In order to test for the presence or absence of fiscal policy persistence in WAMZ and what would be the likely impact of this on

economic integration in the region, two additional models, model 1 and model 2 were introduced. The models were estimated using

the Instrumental Variables-Fixed Effects (IV-FE) estimation method. The IV-FE method of estimation was chosen in order to avert the potential problem of endogeneity which may occur between the dependent variable, government expenditure and the independent variable, GDP. The problem of endogeneity occurs when there is possible reverse causality between the dependent and the independent variables. In order to avert this problem, suitable instrumental variables (called IVs) are introduced. In this study, the first and second lags of output (GDP) were used as instruments.

Table 2. Results of IV-FE estimation on Fiscal policy persistence

	Dependent variable: Log GE Model 1	Dependent variable: Log RE - Model 2
Lag of Dependent variable	0.767***	0.772***
	(0.082)	(0.113)
Log GDP	0.057	-0.095
	(0.121)	(0.143)
Log Oil price	0.028	0.169
	(0.132)	(0.126)
Lag of Log Oil price	-0.071	-0.288***
	(0.102)	(0.107)
Inflation rate	-0.015***	-0.012***
	(0.0044)	(0.0034)
Observations	96	96
F test	48.48	26.85
Prob. > F	0.0000	0.0000
R-squared	0.70	0.57
Kleibergen-Paap rk LM statistic	28.270	25.629
Chi-sq(2) P-val	0.0000	0.0000
Kleibergen-Paap rk Wald F statistic	99.698	77.259
Hansen J Statistic	1.692	5.146
Chi-sq(1) P-val	0.1933	0.0233
Endogeneity test	4.106	6.871
Chi-sq(1) P-val	0.0427	0.0088

Source: Author's calculation, 2020. Notes: P-values ***p<0.01, **p<0.05, *p<0.1: means variable is statistically significant at the 1%, 5%, and 10% level respectively. Country fixed effects and time fixed effects results are not reported, robust standard errors are given in brackets. Null hypothesis of the Kleibergen-Paap rk LM test is Instruments are not relevant/underidentification while the null hypothesis of the Kleibergen-Paap rk Wald F test is instruments are weak/weak identification.Null hypothesis of endogeneity test is endogenous regressors are exogenous.

From table 2 above, fiscal policy was disentangled to identify its characteristics of responsiveness, persistence and discretion. Fiscal policy responsiveness refers to the elasticity of government expenditure or government revenue to changes in output (GDP) (Afonso, Alnello & Fulceri (2010).

Persistence measures by how much government expenditure or revenue in the current year is determined by the government expenditure or revenue in the previous year. Fiscal policy discretion is captured by computing the standard deviation of the residuals. The variables used

include the natural logarithm of real general government expenditure (in $U.S. billions) represented as logGE, the natural logarithm of real general government revenue (in $U.S. billions) represented as logRE, logGDP is the natural logarithm of real output (in $U.S. billions), logOil is the pump price of gasoline ($ per litre) while infl represents inflation rate (%).

To avoid possible endogeneity which may arise between logGDP and logGE, and between logGDP and logRE, instrumental variables were used. The first and second lags of output were used as instruments. Results for model 1 show that for every 1% increase in the lag of log GE, logGE in the current period increases by 0.767% and it is statistically significant at the 1% significance level while logGDP increases by 0.057%. The former captures fiscal policy persistence while the latter captures fiscal policy responsiveness in government expenditure. The bigger the magnitude for persistence is, then, the smaller is the magnitude for responsiveness and discretion. Results for model 2 show that for every 1% increase in the lag of logRE, logRE in the current period increases by 0.772% and it is statistically significant at the 1% significance level while logGDP decreases by 0.095%. Again, the former depicts fiscal policy persistence while the latter depicts fiscal responsiveness in government revenue.

In both models presented above, the results underscore the fact that fiscal policy persistence (both in government expenditure and revenue) dominates and has a greater magnitude than fiscal policy responsiveness and discretion and this is in line with the results obtained by Afonso, Agnello and Furceri (2010). The implication of this result is that governments are less proactive as they simply repeat the previous year's fiscal policy and even when they do try to exercise discretion, they find it difficult. How does this affect economic integration in the proposed West African currency union? Given the fact that fiscal policy becomes the only tool which

member countries in a currency union can use to direct the affairs of the economy, it presents a potential danger whenever there are external shocks requiring immediate attention. Since the governments have very little space for appropriate discretionary and responsive fiscal policy in the short term, the consequence of this is that such external shock causes more damage which easily spreads to all member nations of the West African monetary union.

Countries having fiscal policy persistence can have adverse effects on economic integration in the WAMZ. When countries are faced with external shocks, fiscal policy characteristics such as responsiveness and discretion should be able to address such. However, if the dominant characteristic is persistence, then that leaves very little room for discretionary policies to tackle external shocks in the short run. Depending on the nature and magnitude of external shocks, it could lead to macroeconomic instability, recession, unemployment and inflation. The problem is compounded due to the fact that such countries no longer have control over monetary policy. The consequence of this is that it could lead to a contagion depending on the level of economic integration among member countries. Ultimately, what happens is that countries decide to pull out of the currency union in order to regain control over their monetary policy and find solutions to their economic problems. As a result of this, it could lead to disintegration.

4. Conclusion and Recommendations

This study investigated fiscal deficit sustainability in the West African Monetary Zone. It also analyzed fiscal policy persistence and its likely impact on economic integration in the proposed West African monetary union. The experience of the European Monetary Union has shown that having sustainable fiscal policies are important for the success of a union. Results of this study revealed a pro-cyclical and very weak fiscal sustainability for the region.

Many of the WAMZ countries are plagued by civil and ethnic wars, political instability, corruption, lack of transparency and accountability, no respect for the rule of law among others. These are some of the factors that drain government's resources, leading to deficits and the need to borrow. As part of recommendations, the government must make a concerted effort to address these issues raised. Aside from strengthening institutions, there is the need for the introduction of appropriate fiscal rules. Government might even set up fiscal councils as suggested by Wyplosz (2002), whose job it would be to study the fiscal needs of the economy and advise accordingly. Such fiscal councils should be devoid of political interference. If these measures are put in place, it would help to instill fiscal discipline, ensure prudent management of resources and strengthen fiscal sustainability.

Furthermore, results showed a high level of fiscal policy persistence. Due to the inverse relationship between persistence on the one hand and responsiveness and discretion on the other hand, this portends another danger sign for the WAMZ countries. The reason for this is because countries in a monetary union rely heavily on the effectiveness of their fiscal policies to address external shocks and grow the economy. Meanwhile, with high persistence, there is very little room for responsiveness and discretionary fiscal policy needed so badly in a currency union. This becomes a threat to economic integration and for the proposed Economic Community of West African States (ECOWAS) single currency union. As a way out, government must reduce it's over dependence on previous fiscal policy stance and give more room for discretionary policies. Improved institutions and an independent fiscal policy committee, devoid of political interference can also help in this regard by giving expert advice to government.

In light of the following revelations, the planned single currency union should be suspended until a time when deficits are strongly sustainable and preferably when fiscal policies are countercyclical and less persistent. The reason for this recommendation is based on the fact that in a monetary union, individual member countries give up control of their monetary policies and are left with only their fiscal policy. Hence the reason why countries with unsustainable fiscal deficits shouldn't be a part of a monetary union. The Greek debt crisis is a clear case of what can go wrong with such countries. Setting up a monetary union is certainly not the solution to the challenges facing WAMZ in particular and ECOWAS in general. Besides, these countries hardly trade with one another and so having a single currency is not going to boost trade. The major trading partners of the region are the U.S., Europe and China. The manufacturing capacity of these West African countries is very low hence the reason why they are import dependent. Government needs to create a conducive environment for the manufacturing sector to thrive by providing constant power and water supply, good road network, telecommunication facilities, tax incentives and implementing export-promotion policies.

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