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Revenue and Expenditure Nexus: A Case Study of ECOWAS

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Abstract This paper aims to assess the relationship among fiscal variables (net lending, government expenditure and revenue) and economic growth in Sub-Saharan African countries. Using yearly data for the period between 1980 and 2011 in 15 ECOWAS countries, a weak long-run relationship between government expenditure and revenue emerge, but only in the case of WAMZ countries. Granger causality analysis showed mixed results for WAEMU countries, while for four out of six WAMZ countries (Gambia, Liberia, Nigeria, and Sierra Leone) the "tax-and-spend" hypothesis holds, since government revenue would drive the expenditure. Finally, in the last three decades, cyclical component of economic growth has reduced its fluctuations, both for WAEMU and WAMZ member States.

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Keywords ECOWAS; Sub-Saharan Africa; economic growth; government expenditure; government revenue; panel

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1. INTRODUCTION

The global financial crisis had a major impact on many African countries as a result, *inter alia*, of reduced commodity exports, the shrinking of domestic tax bases owing to a contraction of domestic output, and reduced remittances, leading to a deterioration of balance of payments positions. Therefore, African countries should continue implementing the macroeconomic and fiscal reforms that saw the continent achieving high growth rates prior to the financial and economic crisis.

The current European economic crisis can also be seen as an opportunity for the African Union to learn from the structural weaknesses of the European Economic and Monetary Union (UN and AUC, 2012). A regional "Convergence, Stability, Growth, and Solidarity Pact", adopted by the Conference of Heads of State of WAEMU in December 1999 provided a framework for fiscal convergence similar to the European Union's Maastricht Treaty.

Furthermore, one way to establish fiscal policy is to examine the relationship between revenue and expenditure in the framework of Granger causality. These empirical results provide an objective statistical basis to form empirical judgments about the correlations underlying fiscal variables (Doré and Nachega, 2000). Several alternative hypotheses of government finance characterize the causal relation between expenditure and revenue. The "tax-and-spend" hypothesis, due to Buchanan and Wagner (1977) and Friedman (1978), theorizes a causal relation running from revenue to spending. It views spending as adjusting, up or down, to whatever level can be supported by revenue. The "spend-and-tax" hypothesis relies on the reverse relation, with revenue responding to prior spending changes, in line with the Ricardian equivalence theorem (Barro, 1974). The third hypothesis emphasizes the institutional separation of allocation and taxation

functions of government and the independent determination of revenue and spending (Wildavsky, 1988). Finally, the fourth hypothesis indicates bidirectional causation between revenue and spending, if a feedback mechanism is established (Musgrave, 1966; Meltzer and Richard, 1981).

The remainder of this paper is organized as follows. Section 2 is devoted to present and discuss theoretical background and empirical evidence about this issue. In Section 3 we briefly illustrate econometric methodologies and data. Section 4 shows the econometric analyses, and Section 5 concludes, giving some policy implications.

2. LITERATURE REVIEW

As stated in Aryeetey (2001), the main problem for the region remains its inability to nurture a critical mass of countries, so that fall-outs turn from negative to positive. The lack of monetary coordination tends to adversely affect bilateral trade, which remains volatile, minimal, and one-sided.

A flexible exchange rate could have possibly alleviated the costs of external shocks in terms of trade within CFA zone. Devarajan and Rodrik (1991) calculations suggest that fixed exchange rates have been, on the whole, a bad bargain for the CFA member countries, and the output costs of maintaining a fixed exchange rate have outweighed the benefits of lower inflation.

Results for WAMZ countries in Balogun (2009) suggest that the production and asymmetric shocks experienced by these countries is not caused by exchange rate devaluation. Moreover, given the *ex-ante* independent fiscal and monetary policy, only two countries could meet output convergence criterion.

Since the CFA arrangement produced lower inflation and higher GDP growth from

the early 1950s to the mid-1980s, its benefits overcame the costs. On the other hand, during the 1986-1993 years, the zone experienced a cumulative deterioration of the terms of trade combined with growing external debt in line with fiscal indiscipline, and a bank crisis.

A study on exchange rate regime by Dordunoo (2000) suggests that inflation rate is generally lower in the CFA zone than in the flexible exchange rate zone. Moreover, investment/GDP ratio and trade growth are significant and positively correlated with growth, regardless of regime selection, while openness contributes more to growth in the CFA zone. Instead, results of Elbadawi and Majd (1996) indicate a weakening competitive position of the CFA members, during the second half of 1980s relative to the first half, compared with the non-CFA countries, in terms of output growth as well as the performance of exports, investment, and savings. Moreover, as noted by Hadjimichael and Galy (1997), the fixed exchange rate regime does not buffer CFA franc countries form external shocks. Further, wide differences still exist between real exchange rate shocks facing CFA zone and non-CFA zone West African countries (Ogunkola, 2005). Roudet *et al.* (2007) find that much of the long-run behaviour of real effective exchange rates in WAEMU countries can be explained by fluctuations in terms of trade, government consumption, investment, and productivity. Chudik and Mongardini (2007) present a methodology to estimate equilibrium real exchange rates for Sub-Saharan African countries, and their empirical findings replicate well the historical experience for a number of countries in the sample.

Bénassy-Quéré and Coupet (2003) conclude that the existing CFA franc zone cannot be viewed as an optimum currency area: CEMAC and WAEMU countries do not belong to the same clusters. The results support the creation of a monetary union, con-

necting the Gambia, Ghana and Sierra Leone to the WAEMU. Including Nigeria in this zone is not supported by the analysis. Analogous results are achieved by Debrun *et al.* (2002), which demonstrated that an ECOWAS monetary union might be desirable for most of the non-WAEMU countries, while could be less attracting for many actual members. The major reason is that Nigeria would have a preponderant weight in such a union, albeit its high fiscal distortion, and this could generate inflation. In addition, Nigeria's terms of trade differ from those of its neighbours, implying asymmetric shocks.

In the same way, Honohan and O'Connell (1997) warn that, although the trend is toward more flexible monetary regimes, the transition to greater flexibility might exacerbate credibility and macroeconomic management problems.

The empirical findings in Dramani (2010) show that the convergence process and, hence, that of integration has not been carried out uniformly in the Franc zone: the process has been given greater emphasis in WAEMU than in CEMAC zone, casting doubts on the common convergence path in the franc zone.

The empirical results in Cham (2010) show that real exchange rate variability has increased substantially across WAMZ zone in recent years (2000 to 2005). In addition, terms of trade, trade balance and money supply percent of GDP are negatively correlated among member countries.

In line with theory and most evidence for advanced and emerging market economies, Fernández Valdovinos and Gerling (2011) demonstrates that higher inflation increases inflation uncertainty and relative price variability in all WAEMU countries. However, the pattern, magnitude and timing of these two channels vary considerably by country.

The analyses of Fielding and Shields (2001) turn out that there is a large and positive degree of correlation between inflation shocks to the different members of the CFA.

Thus, they conclude that there is no particular advantage to having two currencies rather than just one.

Regional trade agreements seem to present Africa with a "lose-lose" situation. If Africa does not develop export capacity in key machinery and transport equipment, the region will continue to depend heavily on third countries for those exports (Yeats, 1998).

Despite evidence of significant trade complementarities within WAEMU, Goretti and Weisfeld (2008) stress that the implementation of the union's current trade regime still suffers from persistent non-tariff barriers and administrative weaknesses. In addition, ECOWAS members have a lot to gain by implementing the export diversification strategy (Odularu, 2008). A research on bilateral trade in WAEMU and CEMAC zone by Dramani (2011) show a sensitive reduction of the effects borders, an improvement of the institutional effects as well as the effects bound to the distance on the flux of the intra-zone trade. On the other hand, a relative symmetry of real demand shocks emerges, while the price and supply shocks present an asymmetric character.

Hadjimichael and Galy (1997) calculate that the shift of the peg of the CFA franc to the euro could be positive over the long term for the countries involved, albeit might be a risk of a weakening of external competitiveness.

The findings shown in Chuku (2012) reveal a relatively high degree of symmetry in the responses of the economies to external disturbances, while about 85 percent of the correlations in supply, demand and monetary shocks among the countries are asymmetric. The size of the shocks and speed of adjustment among countries are also dissimilar. Instead, Hoffmaister *et al.* (1998) highlight that external shocks appear to have a greater influence on output and real exchange rate fluctuations in CFA franc area. Houssa (2004) underlines the presence of economic costs for a monetary union in West Africa,

since aggregate supply shocks are poorly correlated or asymmetric across these countries, while aggregate demand shocks are more correlated between West African countries. In a seminal work, Devarajan and de Melo (1987) address the question whether particular aspects of the CFA zone – such as the lack of autonomy of the two Central Banks and the surrender of the exchange rate as a policy instrument – have impeded its members' growth, by testing whether CFA zone countries had different GNP growth rates from selected "comparator" countries during 1960-1982. Results show that CFA countries grew significantly faster than comparator SSA countries but usually slower, and often significantly so, than the whole sample of developing countries. Similarly, Guillaumont *et al.* (1988) estimated that the "relative growth performance" of 12 franc zone African countries appears to be close to the average performance of other developing countries and better than that of other African countries. The results are explained by the direct influence of the foreign exchange regime of the zone and by its impact on economic policy.

With the exception of Burkina Faso and Mali, the growth experience for WAEMU countries has been disappointing, even when compared to other Sub-Saharan African (SSA) countries. Kinda and Mlachila (2011) find that the variables most closely associated with growth accelerations and decelerations in SSA are changes in terms of trade, private investment, civil tension, real exchange rates, and inflation. Moreover, a certain asymmetry between accelerations and decelerations emerges, and the WAEMU region is quite different from the rest of SSA. On the other hand, Wane (2004) notes that growth is largely explained by changes in literacy rates and factor accumulation, but not by growth of total factor productivity (TFP). Besides, the estimation identifies aid, government spending, credit to the private sector, and openness as positive determinants of

TFP growth, and government deficits as a negative determinant.

Fouda and Stasavage (2000) identify three different alternatives that CFA franc zone could be take into account in order to reform itself: i. extend the existing CFA arrangements to other African countries; ii. EU can replace France as an external guarantor for African currencies; iii. focusing on inter-Africa relations rather than those with the EU.

CFA experience suggests that monetary union might weaken fiscal discipline through prospect of a bailout (Masson and Pattillo, 2001). Nonetheless, the implementation of structural adjustment programmes by various governments in the sub-region has brought about a reasonable level of convergence.

As for the government expenditure-revenue relationship, causality tests in Doré and Nachega (2000) illustrate that, in the long-run, the "tax-and-spend" hypothesis holds for Burkina Faso and Senegal; the reverse flow ("spend-and-tax" hypothesis) is valid for Benin and Togo; a feedback mechanism exists in Côte d'Ivoire and Mali; while neutrality hypothesis (with the absence of any causal link) has been found for Niger.

3. ECONOMETRIC METHODOLOGY, DATA AND THE EMPIRICAL MODEL

With the growing use of cross-country data over time to study purchasing power parity, growth convergence and international R&D spillovers, the focus of panel data econometrics has shifted towards studying the asymptotic of macro panels with large N (number of countries) and large T (length of the time series) rather than the usual asymptotic of micro panels with large N and small T. A strand of literature applied time series procedures to panels, worrying about non-stationarity, spurious regression and cointegration. Im, Pesaran and Shin (IPS, 2003) proposed a test based on the av-

erage of the ADF statistics computed for each individual in the panel. Formally we assume that under the alternative hypothesis the fraction of the individual processes that are stationary is non-zero Maddala and Wu (1999) proposed a new simple test based on Fisher's suggestion, which consists in combining p-values from individual unit root test. Fisher-type tests approach testing for panel-data unit roots from a meta-analysis perspective. The joint test statistic, under the null and the additional hypothesis of cross-sectional independence of the errors terms ε_{it} in the ADF equation, has a chi-square distribution with $2N$ degrees of freedom. In essence, we choose these tests because they do not require strongly balanced data, and the individual series can have gaps.

Then we control for the (eventual) cross-section dependence in the data. The parametric testing procedure proposed by Pesaran (2004) tests the hypothesis of cross-sectional independence in panel data models with small T and large N.

Furthermore, we adopted the t-test for unit roots in heterogeneous panels with cross-section dependence, proposed by Pesaran (2003). Parallel to IPS test, it is based on the mean of individual DF (or ADF) t-statistics of each unit in the panel. Null hypothesis assumes that all series are non-stationary.

Granger causality tests (Granger, 1980) are statistical tests of causality in the sense of determining whether lagged observations of another variable have incremental forecasting power when added to a univariate autoregressive representation of a variable. X_t is Granger causal for y_t if x_t helps predict y_t at some stage in the future. It should be noticed, however, that Granger causality is not causality in a deep sense of the word. It just talks about linear prediction, and it only has "teeth" if one thing happens before another.

The empirical investigation in this study is carried out using a panel dataset for a sample of ECOWAS member countries with annual frequency from 1980 to 2011, and the data were provided by IMF[1] and World Bank[2] databases, freely consulted on the internet.

4. THE ESTIMATES

In Table 1 the variables used in the empirical analyses are summed up. Figures 2 and 3 in the *Appendix* give supplementary graphical descriptions of the data.

Table 1. List of the variables.

Variable	Explanation	Source
y	Gross domestic product, constant prices, % change	IMF
GGNL	General government net lending/borrowing, % of GDP	IMF
GGTE	General government total expenditure, % of GDP	IMF
GGR	General government revenue, % of GDP	IMF
TOT	Terms of Trade, constant local currency unit	WB
GGBD	General government gross debt, % of GDP	IMF

In Table 2 some preliminary descriptive statistics are shown. In order to give a more detailed analysis, we analyzed the three different groups. Interestingly, WAEMU countries show an economic growth slower than WAMZ ones, but lower public deficit/GDP ratios. Conversely, government expenditure and revenue shares have similar means around 21% and 18%, respectively.

[1] See the website: http://www.imf.org/external/pubs/ft/weo/2012/01/weodata/index.aspx.
[2] See the website: http://data.worldbank.org/topic.

Table 2. Exploratory data analysis (WAEMU, WAMZ and ECOWAS countries, 1980-2011).

Variable		Mean	Median	Standard Deviation	Skewness	Kurtosis	Range
WAEMU	y	2.9085	3.2830	4.4354	-1.8087	12.7569	41.0890
	GGNL	-2.1250	-2.5035	5.5048	5.2044	37.5937	53.4610
	GGTE	21.0784	21.2330	3.3353	-0.5878	3.8982	19.0790
	GGR	18.9534	18.4385	5.9322	4.4691	30.2767	50.2720
	TOT	121.2021	113.0303	43.6374	0.7900	4.3639	244.7940
WAMZ	y	3.4355	4.1880	6.4679	-1.1941	10.8877	58.7090
	GGNL	-3.3587	-3.4425	5.3823	2.0313	11.8750	40.5610
	GGTE	21.4634	20.2330	7.6063	1.4042	5.7391	41.9810
	GGR	18.1048	16.0830	8.2659	1.3563	4.7952	41.6490
	TOT	109.6651	100.5760	31.7282	0.9895	4.1514	172.1943
ECOWAS	y	3.3212	3.8920	5.2470	-1.4605	13.1061	58.7090
	GGNL	-2.7707	-3.0870	5.4339	3.8327	27.6177	54.3200
	GGTE	21.8191	21.2475	6.1506	1.3581	6.6226	41.9810
	GGR	19.0484	17.9600	7.2378	2.1094	10.6366	55.9500
	TOT	115.9675	103.7037	39.0705	1.0370	5.0021	244.7940

Table 3 shows the results of IPS and Fisher-type panel unit root tests. The level models have been specified without subtracting the cross-sectional averages from the series, while the Hannan-Quinn information criterion is used to determine the number of lags used to remove higher-order autoregressive components of the series. More or less, *GGR* appears to be stationary everywhere, although for the WAMZ group it does not reject the null that all panels have a unit root at a 5% significance level. Government expenditure (*GGTE*) seems to be stationary everywhere, except for WAMZ. However, the first differences of the two series appear clearly stationary in each panel.

Table 3. Panel unit root tests.

Im, Pesaran and Shin (IPS) test		
	GGR	**GGTE**
WAEMU	-2.3745	-3.3049
	(0.0088)	(0.0005)
WAMZ	-1.5037	0.3426
	(0.0663)	(0.6341)
ECOWAS	-2.6032	-2.7441
	(0.0046)	(0.0030)
Fisher-type test		
WAEMU	32.4023	40.6455
	(0.0089)	(0.0006)
WAMZ	28.3033	11.1679
	(0.0050)	(0.5146)
ECOWAS	61.9058	75.0691
	(0.0005)	(0.0000)

Notes: Critical values at the 5% significance level in parentheses. For the IPS test the *W-t*-bar statistic and the P-Values are reported; for the Fisher-type test the Inverse chi-squared statistic and, in parentheses, the P-Values are reported. Panel unit root tests include the intercept.

A standard assumption in panel data models is that the error terms are independent across cross-sections. Empirical findings in Table 4 show that, at a 5% significance level, the hypothesis of cross-sectional independence in our panel data might be maintained only for government revenue series in WAMZ countries.

Table 4. Panel cross-section dependence tests.

Pesaran test		
	GGR	**GGTE**
WAEMU	4.684	2.820
	(0.0000)	(0.0048)
WAMZ	1.811	2.370
	(0.0701)	(0.0178)
ECOWAS	4.648	1.990
	(0.0000)	(0.0466)

Notes: Critical values at the 5% significance level in parentheses. Pesaran's statistic and, in parentheses, the P-Values are reported. Tests include the intercept.

To eliminate the cross dependence, the standard DF (or ADF) regressions are augmented with the cross section averages of lagged levels and first-differences of the individual series (CADF statistics). Now, when cross dependence problem is taken into account, previous results are confirmed, since government expenditure in WAMZ countries is the only non-stationary series, in line with conclusions based on IPS and Fisher-type tests (Table 5).

Table 5. Panel unit root test in presence of cross section dependence tests.

	Pesaran's CADF test	
	GGR	**GGTE**
WAEMU	-3.320	-2.022
	(0.000)	(0.022)
WAMZ		-1.714
		(0.515)
ECOWAS	-2.763	-2.744
	(0.003)	(0.003)

Notes: Critical values at the 5% significance level in parentheses. The *Z-t*-bar or *t*-bar statistics and, in parentheses, the P-Values are reported. Panel unit root tests include the intercept.

The panel cointegration tests point to the existence of a long-run relationship between government expenditure and revenue. As for the panel cointegration tests, the G_a and G_t statistics test H_0: a_i=0 for all i versus H_1: a_i<0 for at least one i. While the P_a and P_t test statistics pool information over all the cross-sectional units to test H_0: a_i=0 for all i against the alternative a_i<0 for all i. Here, the null of no cointegration is rejected by most of the Westerlund (2007) tests at the 5 per cent level (see Table 6). The group statistics show that for WAMZ countries we cannot reject the null of absence of panel cointegration. Thus, panel data findings reveal the existence of a long-run relationship between government expenditure and revenue, albeit only in the case of WAMZ countries.

Table 6. Panel cointegration tests (Westerlund).

Sample	**Group statistics and Panel statistics**	**Value**	**P-Value**
WAMZ	Gt	-1.462	0.127
	Ga	-6.899	0.048**
	Pt	-3.168	0.050*
	Pa	-4.824	0.001***

Notes: Critical value at the 5% significance level in parentheses. Panel cointegration tests include intercept.

Finally, in Table 7 we show the results for causality tests. We perform Granger causality tests to investigate whether lagged values of government expenditure help in forecasting government revenue, and vice versa.

Table 7. Results for Granger causality tests.

Country	Granger causality	χ^2	P-Value	Country	Granger causality	χ^2	P-Value
Benin	GGTE⇏GGR	2.72	0.2562	Gambia	GGTE⇏GGR	0.09	0.9554
	GGR⇏GGTE	1.40	0.4954		GGR⇏GGTE	7.58	0.0226**
Burkina Faso	GGTE⇏GGR	7.46	0.0240**	Ghana	GGTE⇏GGR	0.40	0.8191
	GGR⇏GGTE	2.76	0.2513		GGR⇏GGTE	0.27	0.8716
Côte d'Ivoire	GGTE⇏GGR	0.52	0.7723	Guinea	GGTE⇏GGR	11.57	0.0031***
	GGR⇏GGTE	2.62	0.2702		GGR⇏GGTE	2.56	0.2778
Guinea-Bissau	GGTE⇏GGR	2.85	0.2411	Liberia	GGTE⇏GGR	0.64	0.7260
	GGR⇏GGTE	1.88	0.3911		GGR⇏GGTE	17.25	0.0002***
Mali	GGTE⇏GGR	6.11	0.0472**	Nigeria	GGTE⇏GGR	1.12	0.5720
	GGR⇏GGTE	49.40	0.0000***		GGR⇏GGTE	18.25	0.0001***
Niger	GGTE⇏GGR	1.22	0.5426	Sierra Leone	GGTE⇏GGR	4.36	0.1129
	GGR⇏GGTE	6.16	0.0459**		GGR⇏GGTE	7.15	0.0281**
Senegal	GGTE⇏GGR	17.16	0.0002***				
	GGR⇏GGTE	0.95	0.6222				
Togo	GGTE⇏GGR	5.53	0.0630*	Cape Verde	GGTE⇏GGR	16.52	0.0003***
	GGR⇏GGTE	2.48	0.2890		GGR⇏GGTE	3.53	0.1712

Notes: 5% Critical Values in parenthesis.

Empirical findings listed in Table 8 suggest a bi-directional flow (with a feedback mechanism) only for Mali. "Spend-and-tax" hypothesis (if causality runs form expenditure to revenue) holds for five countries. On the other hand, we find a unidirectional causality, running from government revenue to expenditure, in line with the "tax-and-spend" hypothesis, for five countries. Finally, four countries exhibit the absence of any causal relationship (neutrality hypothesis).

Table 8. Summary of Granger causality tests results.

Hypothesis	Causality flow	Countries
Feedback	GGTE↔GGR	1: Mali
Spend-and-tax	GGTE→GGR	5: Burkina Faso, Senegal, Togo, Cape Verde, Guinea
Tax-and-spend	GGR→GGTE	5: Niger, Gambia, Liberia, Nigeria, Sierra Leone
Neutrality	GGTE⇎GGR	4: Benin, Côte d'Ivoire, Guinea-Bissau, Ghana

In general, we can state that these are mixed results, since any causal link clearly outpaces the other. Nevertheless, it may be underlined that in four out of six WAMZ member States a causality flow running form government revenue to expenditure emerges. Control of taxation, according to Friedman (1978), is essential to limiting

growth in government; and these countries raised both variables in the last decades (Nigeria represents the unique exception), so that higher taxes could finance more public services. It is quite interesting to point out a substantial difference of our causality analyses in respect to Doré and Nachega (2000) long-run results, for WAEMU zone.

5. CONCLUDING REMARKS AND POLICY IMPLICATIONS

This study has used several panel econometric techniques in order to explore the relationship among public finance variables and economic growth in ECOWAS countries, in the period 1980-2011. It has been found that government expenditure and revenue are pro-cyclical in WAEMU and ECOWAS countries, while fiscal balance has pro-cyclical effects for WAEMU during the years 1999-2011. In WAMZ and ECOWAS groups economic growth and terms of trade do not influence fiscal balance in the same time period.

Further, panel stationarity and cointegration analyses revealed a weak long-run relationship between government expenditure and revenue, only for WAMZ countries. Granger causality analysis showed mixed results for WAEMU countries, while for four out of six WAMZ countries (Gambia, Liberia, Nigeria, and Sierra Leone) the "tax-and-spend" hypothesis holds.

The European Union member States are suffering from a debt crisis that was brought about by various discrepancies in the structure of the monetary union established. One of them is the lack of a fiscal policy framework consistent with a monetary union. The Pact signed by the Heads of State of WAEMU countries in 1999, even though it has provoked weaken economic growth, has also reduced the cyclical fluctuations, giving greater financial stability to those countries. Yet, in the last three decades,

cyclical component of economic growth has reduced its oscillations, both for WAEMU and WAMZ member States.

Greater intra-African trade and regional integration are therefore required, in order to improve the benefits of a monetary union. This might enhance the creation of an African Monetary Fund (AMF) to play an oversight role and to curb financial instability where it is detected.

Given that some CFA countries have significant trade outside the CFA/Euro Area and have substantial dollar-denominated debts, significant changes in the euro-dollar or euro-yen exchange rates may be of considerable importance. While a weak euro would improve their international competitiveness, it would increase their debt payments. By contrast, a strong euro might offer price stability, even the high interest rates associated with such a monetary policy might deter investment.

Moreover, several efforts are still needed. African central banks' supervisory and regulatory functions should be strengthened and there should be minimal government intervention in the decisions taken by the regulatory agencies. It should be accompanied by the strengthening of financial institutions and enforcement of strict transparency standards in financial transactions (UN and AUC, 2012).

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Appendix

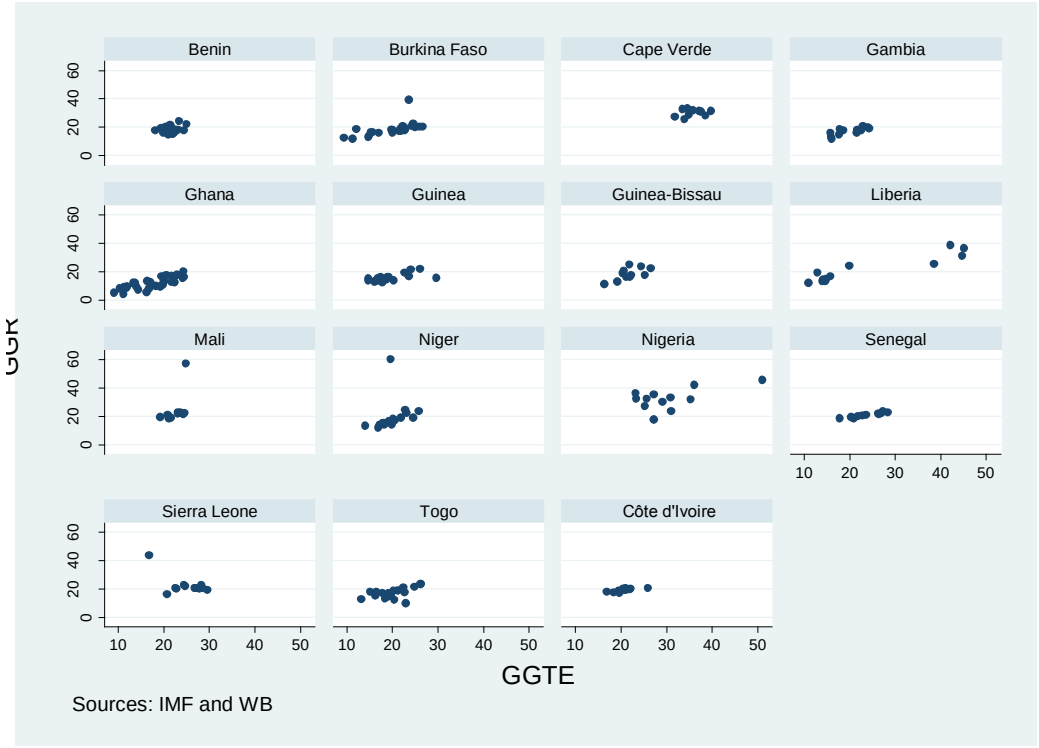

Figure 2. Government expenditure and revenue in ECOWAS countries (1980-2011).

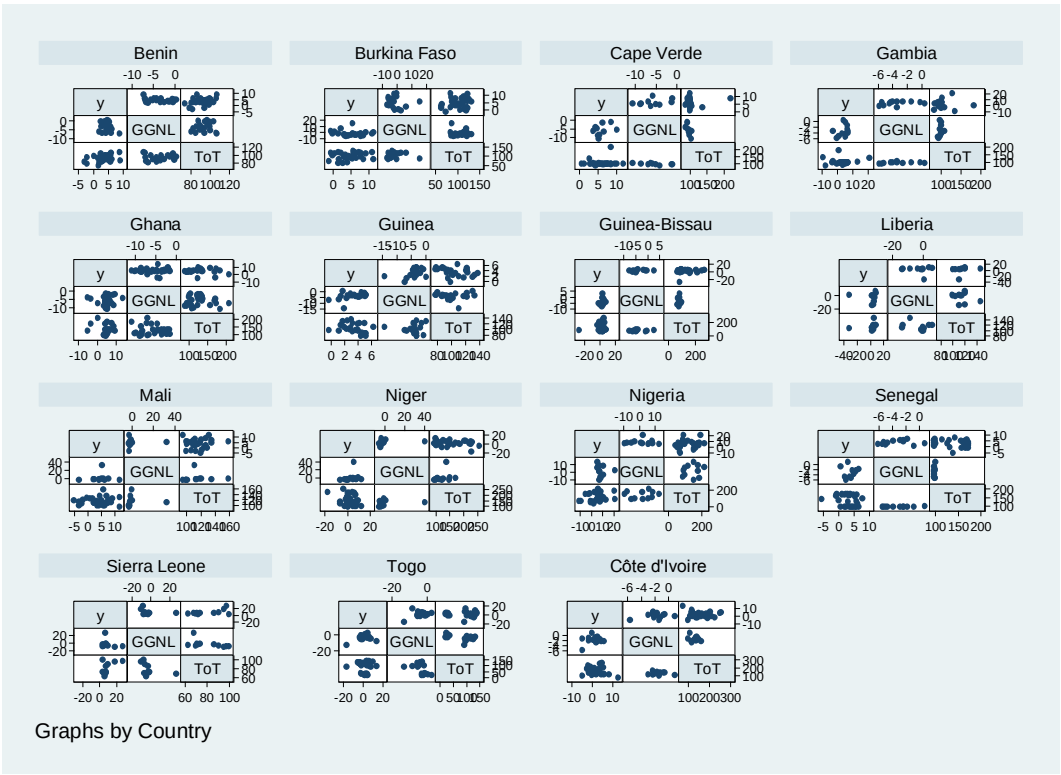

Figure 3. Economic growth, government budget and terms of trade in ECOWAS countries (1980-2011).

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