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WEST AFRICAN MONETARY UNION AND COLONIAL ECONOMIC TIES*

ABSTRACT

This paper examines the effects inherited economic and monetary colonial ties exert on the monetary unification of the Economic Community of West African States. Specifically, the study substituted in a Structural Vector Auto Regression framework domestic supply shocks with import supply price shocks from the former colonial economies (France, Portugal, and the UK), the regional economy, and the global economy to assess their effects on member countries' monetary convergence variables. Empirical results provide evidence that convergence variables respond more symmetrically to supply price shocks from the former colonial economies and the global economy than from the regional economy. The predominance of pairs of former French colonies with symmetric responses to supply shocks can be attributed to the *Communauté Financière Africaine franc* effect. Besides, symmetric convergence variables' responses by countries of different colonial heritages can be due to the proximity effect. The variables' impulse responses to a unit of regional price shock cluster member countries with comparable paths into subgroups. However, the wide gaps between the magnitudes of their responses reveal the absence of inflation, fiscal policy, and monetary convergences. Finally, inherited colonial economic and monetary ties are not conducive to the monetary unification of the region.

Keywords: Colonial Ties; Regional Integration; Macroeconomic Convergence; Monetary Convergence; Monetary Union

JEL Classification: E31; E52; H30; F45; O42

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RIASSUNTO

Unione monetaria dell'Africa dell'ovest e legami economici coloniali

Questo articolo esamina gli effetti che i legami economici e monetari ereditati dalle ex-colonie esercitano sull'unificazione degli stati della Comunità Economica dell'Africa occidentale. Precisamente lo studio, nell'ambito di un modello SVAR (Structural Vector Autoregressive Regression), sostituisce gli shock di offerta interna con gli shock dei prezzi delle importazioni dagli ex-paesi colonizzatori (Francia, Portogallo e Regno Unito), dei prezzi dell'economia regionale e con quelli dell'economia globale al fine di valutare i loro effetti sugli indicatori di convergenza monetaria dei paesi membri. Risultati empirici forniscono evidenza che le variabili di convergenza rispondono più simmetricamente agli shock dei prezzi provenienti dagli ex-paesi colonizzatori e dall'economia globale che a quelli dall'economia regionale. La predominanza di risposte simmetriche a shock di offerta nelle ex colonie francesi può essere attribuita all'effetto del franco della Comunità finanziaria africana. Inoltre, risposte simmetriche di paesi provenienti da diverse esperienze coloniali possono essere dovute all'effetto prossimità. Le risposte di impulso delle variabili nei confronti di uno shock dei prezzi a livello regionale creano una suddivisione in sottogruppi dei paesi che presentano risposte comparabili. Tuttavia, l'ampio divario tra l'entità delle loro reazioni rivela l'assenza di convergenza di inflazione, politica fiscale e monetaria. Si deduce che i legami monetari ed economici ereditati dalle ex-colonie non favoriscono l'unificazione monetaria della regione.

1. INTRODUCTION

The Economic Community of West African States (ECOWAS) is dragging behind its agenda to become a monetary union as per the Lagos Plan of 1975. The ongoing political debate over the substitution of the Communauté Financière Africaine (CFA) Franc with the Eco, a West African currency, only triggers a limited popular interest but raises an important research question over the impact the CFA franc and other inherited colonial economic ties exert on the process. While low intra-regional trade and weak political resolves plague the process, it also requires a much-integrated policy framework to address economic and monetary constraints born out of such ties. Out of the 15 member countries, 8 belong to the West African Economic and Monetary Union (WAEMU) and use the CFA franc, a currency pegged to the French franc until 1994 and now to the Euro.

To accelerate the process, a second monetary zone, the West African Monetary Zone (WAMZ) was created in 2000 in addition to WAEMU. In 2001, a surveillance mechanism was adopted with a set of macroeconomic convergence criteria (Saka *et al.*, 2015). Other activities such as preferential integration of intraregional trade, transport, and communication projects were slated for implementation. However, the ultimate goal of a single currency for the region is yet to be achieved. The initial target of the year 2000 was pushed to 2005, 2009, and then 2020. Recently, a new road map and a new convergence pact were adopted to cover the period 2022-2026 with the launching of the *eco* in 2027 (France 24, 2021). Earlier, in 1987, the ECOWAS Monetary Cooperation Programme (EMCP) was adopted to improve sub-regional payment systems. It was implemented by the West African Clearing House, which in 1995 became the West African Monetary Agency (WAMA). Unfortunately, WAMA failed in its task of integrating West Africa economically. According to Chukwu and Nkem Onyekpe (2014), the failure of WAMA was mainly due to two interrelated factors namely – colonial legacies and politics. Besides, Acocella (2020) argues that regional agreements such as European Monetary Union (EMU) do not shield countries from external shocks. On the contrary they may even intensify the impact of such shocks. Evidently, the shadow of France, the former colonial country and guarantor of the CFA currency, floats over the economies, and indirectly influences the monetary unification of ECOWAS (Davidson, 1992; Chukwu and Nkem Onyekpe, 2014). The other regional members, except Liberia, also inherited colonial economic and monetary ties that affect their economies and the process indirectly. Thus, concern over how such ties influence the regional monetary unification directly or indirectly is justified. It is even more justified that the monetary unification of Europe and the US were denuded of such ties whose effects are left largely unexploited in the literature.

While earlier studies focused on identifying whether ECOWAS economies present traits of a common monetary union, the present paper attempts to identify which features impede the establishment of a common monetary union. Specifically, this paper attempts to investigate the impact inherited economic and monetary colonial ties exert on the monetary unification of ECOWAS. For this purpose, we substituted domestic structural shocks with import supply price shocks from the regional economy, the global economy, and the former colonial economies (i.e., France, Portugal, and the United Kingdom) in a Structural Vector Auto Regression (SVAR) framework. The domestic variables subjected to external shocks include inflation, fiscal balance, and money supply. These variables are often targeted in the development of monetary

convergence criteria. The motivation is that a member country's ability to satisfy these criteria depends in part on the direct and indirect shocks the convergence variables receive from the import supply prices.

Empirical results from the study provide evidence of the existence of more symmetric responses by the convergence variables to supply price shocks from former colonial economies and global supply price shocks than from regional supply price shocks. The results obtained from the variance decompositions of changes in inflation, fiscal policy, and monetary policy variables indicate that the variations/innovations are overwhelmingly due to supply price shocks from the colonial economies and global supply price shocks. The predominance of symmetric responses of the convergence variables to the supply price shocks among former French colonies is attributable to the CFA franc effect. At the same time, the symmetries of the convergence variables' responses among pairs of countries of different colonial heritages were in part due to the proximity effect. However, given close proximity, symmetric variable responses by a WAEMU country and its West African Monetary Zone (WAMZ) neighboring country is in part determined by the size of the economy of the latter. The results from the impulse response functions show that the monetary convergence variables tend to adjust at different speeds and magnitudes to a regional supply prices shock. Clustered around comparable response paths, member countries exhibit significant gaps in the magnitudes of their responses to the shock, given parallel price influence from France, Portugal, and the UK. In all, the results of the study offer no evidence of inflation, fiscal policy, and monetary policy convergences among the sample countries. The results further reveal that inherited colonial monetary ties are not conducive to the monetary unification of the region.

The rest of the paper is organized into five sections. Section 2 reviews the literature, section 3 sets the theoretical framework, section 4 presents the empirical results, section 5 discusses the findings, and section 6 offers the conclusions.

2. REVIEW OF LITERATURE

Economists explore the prospects of monetary unification by testing three fundamental criteria of the Optimum Currency Area (OCA) theory either separately or simultaneously. The first theory advanced by Mundell (1961) requires high factor mobility among member countries to

dampen the effects of diverging inflation and unemployment cycles. The second theory developed by McKinnon (1963) calls for a high degree of openness among member countries to reduce exchange rate uncertainty, lowering transaction costs to increase trade. The third theory advanced by Kenen (1969) reinforces the second in requiring a high degree of product diversification among member countries to facilitate and increase exchanges. For the first criterion, economists test for business cycle synchronicity or symmetry of macroeconomic shocks among members, as idiosyncratic shocks constitute a cost for a monetary union (De Grauwe and Mongelli, 2005; Regmi *et al.*, 2015; Chow and Kim, 2003). In other words, a common policy to address shocks received by members only, benefits them only if the shocks are similar (Mati *et al.*, 2019).

The testing of business synchronicity for the feasibility of a monetary union was popularized by the European unification and has been extended to other regional schemes. In Asia, it has been applied to test the feasibility of Southeast Asia as an OCA (Zhang *et al.*, 2004; Yuen and Ling, 2001). In Africa, it has been tested on prospective regional groupings (Asongu *et al.*, 2017) including the East African Community (EAC) (Mafusire and Brixiova, 2012; Rusuhuzwa and Masson, 2013; Buigut and Valev, 2005) and the Southern Africa Development Community (SADC) (Drummond *et al.*, 2015). As for ECOWAS, studies have either tested for symmetries of shocks within WAEMU, WAMZ, or the whole region. Specifically, Houssa (2008) used a dynamic factor model to estimate the effects of demand and supply shocks on inflation and output growth over the period 1966-2000. He examined the contribution of the shocks to fluctuations in output and prices by variance decomposition and tested the effect of external supply shocks through the terms of trade shock. He found that WAMZ countries have the highest volatility of both output growth and inflation. He attributed the relatively low level of inflation in WAEMU to the peg of the CFA franc to the French franc and now to the euro. He concluded that West African countries need different policy responses to adjust to supply shocks and will therefore find it difficult to operate their monetary union if wages are rigid and/or factor mobility is limited.

Chuku (2012) applied a multivariate SVAR model to assess the feasibility and desirability of proceeding with a common currency union in ECOWAS. He investigated the symmetry of shocks and speed of adjustment among countries to external shocks, domestic supply shocks, demand shocks, and monetary shocks over the period 1970 through 2010. He included monetary shocks and global shocks into the model to evaluate how the economies responded to changes in

their real effective exchange rate and accounted for their primary export-oriented structure. To assess the size of the disturbances, he used the impulse response coefficients which traced the effect of a one-unit shock in each of the four endogenous variables. The results show generally asymmetric domestic demand and supply shocks but less asymmetric monetary shocks, which he attributed in the case of WAEMU countries to the pegging of their currency.

Mati *et al.* (2019), on the other hand, investigated the preparedness of ECOWAS members to form a monetary union with the adoption of a common currency, the Eco in 2020. Using Blanchard and Quah's framework, they tested whether member countries have symmetric responses to shocks from global inflation, regional inflation, global output, and regional output. They compared their responses to those of the European Monetary Union (EMU) countries to similar shocks. The impulse responses to the shocks reveal that a global inflationary shock increases inflation in the Anglophone countries but causes the opposite in the Francophone countries. Variance decompositions indicate that all ECOWAS countries are demand shock-dominated, both in the short and long runs. Regional inflationary shocks, as well as global inflationary shocks are symmetric across ECOWAS. In conclusion, Francophone countries had different business cycles from the Anglophone countries, while most EMU countries shared similar business cycles. In a related study, Anoruo (2019) examined whether *per capita* income between ECOWAS member states have converged for the period running from 1960 through 2014. He found that the *per capita* income of ECOWAS members has not converged to a single equilibrium state. He, however, found evidence of convergence clubs within ECOWAS member states during the full and two sub-sample periods. He concluded that the existence of divergence in *per capita* income underscores the need for member states to embark on proactive economic policy coordination.

Harvey and Cushing (2015) used a SVAR model to derive the variance decomposition and impulse responses of key economic variables to test whether WAMZ is an OCA. They departed from the expectation that countries with symmetric shocks must have linearly dependent shocks and exhibit some level of feedback between these shocks. The variance decomposition shows the zone, as a whole, does not have common sources of shock because of the diverse economic structures of the countries. The impulse response functions and analysis of the

structural shocks suggest that the countries do not respond symmetrically to all external shocks. Consequently, there is a lack of *ex-ante* convergence in the sub-region for it to be an OCA.

Simons and Jean Louis (2018) used the non-parametric measure of synchronicity with and without filtering and three other measures of synchronicity to investigate business cycle linkages in WAMZ. They tested the existence of a common observable component of the cycles and determinants of co-movements between the countries. Against this backdrop, they tested the validity of various measures of trade integration, foreign aid, and foreign direct investment (FDI) in driving the common cycle. Using data on real GDP for the period 1970-2015, they found that trade integration with China, the targeted three European countries (France, Germany, and Italy), and the rest of the world are among the main drivers of the region's common business cycle. They however found more synchronized cycles between China and WAMZ countries than between the three European countries and WAMZ.

Fielding and Shields (2001) constructed a four-variable SVAR representation of the economy of each member of the CFA Zone in WAEMU and the Central African Economic and Monetary Community (CEMAC). The four variables in their study include domestic money, foreign prices, domestic prices and output. They then derived impulse response functions to assess the possible impacts that shocks may exert on variables in each of the 12 countries. Their findings show that the correlation of inflation shocks across the two monetary unions in the CFA zone is as high as the correlations within them, underscoring the lack of any particular advantage in having two currencies rather than one. The impulse response functions show that inflation shocks have a long-run impact on both prices and output, whereas output growth shocks only have a long-run impact on prices. Based on these findings, they recommended that shocks to the Zone be instantly offset by a monetary policy response for their effects to not vary substantially across members if CFA membership is to be of any worth.

Globally, a number of studies including Zhang *et al.* (2004), Fielding and Shields (2001) and Chuku (2012) have extended the Blanchard and Quah (1989) framework in order to test symmetries of domestic macroeconomic variables' responses to structural shocks between countries. Zhang *et al.* (2004) contend that in an open-economy framework, structural shocks estimated through the SVAR model tend to include the effect of foreign shocks. They, therefore, asserted that a high correlation of shocks across the economies does not necessarily imply a

strong correlation of country-specific shocks. To determine whether ECOWAS is an OCA, some earlier studies cross compared their results to those derived from the EMU countries. Most of these studies ignored the impact some EMU countries exert on the unification process through inherited colonial monetary, economic, and political ties. For example, Fielding and Shields (2001) ignored the correlation between shocks to the CFA Zone and shocks to the French economy. They completely overlooked the influence that France exerts on these economies because France is not itself part of the Zone. Yet, Chuku (2012) found more symmetric monetary shocks among WAEMU countries relative to non-WAEMU countries and attributed the difference to the CFA franc.

Unlike the earlier studies, the present study tests business cycle synchronicity between ECOWAS countries accounting for the influence of their inherited colonial economic, monetary, and political ties. The ties between ECOWAS and the colonial countries may not only be crucial but opportune. To attain this objective, the study first tests for the symmetries of macroeconomic variable responses to external shocks among member countries. Second, and specifically, the study assesses how shocks from the former colonial country affect the symmetries of the responses of the convergence variables. Third, it evaluates the extent to which post-colonial economic and monetary ties affect the region's potential to form a monetary union.

3. METHODOLOGY

3.1 The Model

We assumed a small open economy with domestic demand and supply functions as:

$$D_t = a_0 + a_1 P_t^D + a_2 Y_t \quad (1)$$

$$S_t = b_0 + b_1 P_t^S + b_2 Y_t \quad (2)$$

D_t is demand, S_t supply, P_t^d demand price, P_t^s supply price, and Y_t output. Its domestic savings and investments functions are:

$$I_t^D = c_0 + c_1 i_t^D + c_2 Y_t \quad (3)$$

$$I_t^S = d_0 + d_1 i_t^S + d_2 Y_t \quad (4)$$

I_t^D is investments, I_t^S savings, i_t^D money demand rate, and i_t^S money supply rate. The country imports from the region, its former colonial country, and the global economy. Its inflation, fiscal policy, and monetary policy depend on the imports supply prices such that:

$$P_t = e_0 + e_1 P_t^G + e_2 P_t^C + e_3 P_t^R + e_4 T_t + e_5 Y_t \quad (5)$$

$$F_t = g_0 + g_1 P_t^G + g_2 P_t^C + g_3 P_t^R + g_4 T_t + g_5 Y_t \quad (6)$$

$$M_t = f_0 + f_1 P_t^G + f_2 P_t^C + f_3 P_t^R + f_4 T_t + f_5 Y_t \quad (7)$$

P_t is the domestic equilibrium price, F_t fiscal policy, M_t monetary policy, P_t^C supply price from the former colonial country, P_t^G supply price from the global economy, P_t^R supply price from the region, and T_t regional trade. F_t , M_t , and P_t are policy variables targeted for economic stability.

For simplicity, we assumed the central bank supplies the quantity of money required to finance the fiscal balance ($F_t \approx M_t$) and solved for the equilibrium values to obtain the system of equations:

$$\Delta P_t = \alpha_1 \Delta P_t^G + \alpha_2 \Delta P_t^C + \alpha_3 \Delta P_t^R + \mu_t^P \quad (8)$$

$$\Delta F_t = \beta_1 \Delta P_t^G + \beta_2 \Delta P_t^C + \beta_3 \Delta P_t^R + \mu_t^F \quad (9)$$

$$\Delta M_t = \gamma_1 \Delta P_t^G + \gamma_2 \Delta P_t^C + \gamma_3 \Delta P_t^R + \mu_t^M \quad (10)$$

It sets changes in domestic inflation (Equation 8), fiscal policy (Equation 9), and monetary policy (Equation 10) dependent on the global imports supply price, the imports supply price from the former colonial country, and the regional imports supply price with coefficients α , β , and γ cumulated sums of successive incremental changes.

We further assumed the country joins a monetary unification scheme that requires macroeconomic convergences of all members. The convergence criteria target inflation, interest rate, exchange rate, budget balance, and public debt. While changes in exchange and interest rates are primarily market-determined, changes in inflation, budget balance, and money supply are policy-determined. The later three are monetary convergence variables with money supply targeted by the central bank to control inflation and budget balance targeted by the government.

To derive a related Structural Vector Autoregressive model, we fit the monetary convergence system of Equations 8, 9, and 10 into the Blanchard and Quah (1989) framework. For, we let ΔP_t , ΔF_t and ΔM_t denote changes in the logarithm of domestic price, fiscal balance, and money supply affected by structural shocks ε_t^G , ε_t^C and ε_t^R assumed uncorrelated. We let X be the vector $[\Delta P, \Delta F, \Delta M]'$ which follows a stationary process such that:

$$X_t = A_0 \varepsilon_t + A_1 \varepsilon_{t-1} + A_2 \varepsilon_{t-2} + \cdots + \sum_{j=0}^{\infty} A_j \varepsilon_{t-j} \quad (11)$$

It can be written in matrix form as: $X_t = A_0(L)\varepsilon_t$ with $\varepsilon_t = [\varepsilon_t^G, \varepsilon_t^C, \varepsilon_t^R]'$

Since X is stationary, it has a moving average representation:

$$X_t = \mu_t + C_1 \mu_{t-1} + C_2 \mu_{t-2} + \cdots + \sum_{j=0}^{\infty} C_j \mu_{t-j} \quad (12)$$

with $\mu_t = [\mu_t^G, \mu_t^C, \mu_t^R]$ reduced form shocks.

For the identification of the derived system, we imposed 6 restrictions including 3 theoretical and the orthogonality, normality, and exclusion restrictions from the Blanchard-Quah framework. Using Cholesky transformation of the matrix obtained, we derived the time series of structural shocks $\varepsilon_t = [\varepsilon_t^G, \varepsilon_t^C, \varepsilon_t^R]'$ from the relation:

$$\varepsilon_t = A_0^{-1} C_0 \mu_t \quad (13)$$

4. DATA AND EMPIRICAL ESTIMATIONS

4.1 Data

For estimation purposes, we proxied the domestic price (P) with consumer price index (CPI), the supply price from the colonial country (P^C) with each member country's PPP with France, Portugal, and the UK, respectively. Benin, Burkina Faso, Cote d'Ivoire, Guinea, Mali, Niger, Senegal, and Togo are the former French colonies. The Gambia, Ghana, Nigeria, and Sierra Leone are the former British colonies. Cape Verde and Bissau Guinea are the former Portuguese colonies while Liberia has been an independent country since its establishment. However, for convenience, we treated Liberia as a former British colony. We measured global supply price (P^G) for each member country as its PPP scaled by the average of China, Germany, and the

United States' PPPs. These three economies are representative of the global economy. We measured regional price (P^R) for each member country as its PPP scaled by the average of the others' PPPs. The monetary policy variable (M) is measured as broad money in percent of GDP and the fiscal policy variable (F) as general government final consumption in percent of GDP. We estimated the models using annual data from the World Development Indicators (WDIs) of the World Bank and the International Financial Statistics (IFS) of the International Monetary Fund for the time period running from 1960 through 2019. We used annual data to circumvent the inconsistent availability of monthly data for all member countries.

4.2 Empirical Results

Prior to estimating the SVAR models, we used the ADF-Fisher unit root test to secure the stationarity of the variables. Using the Akaike Information Criterion (AIC) we determined the optimal lags to be 2. Hence, we used 2 lags in the estimation of the SVAR models. For estimation purposes, we substituted, in a SVAR model, domestic structural shocks with imports supply price shocks from the former colonial economy, the regional economy, and the global economy to evaluate their effects on ECOWAS member countries' monetary convergence variables namely – inflation, fiscal policy, and monetary policy. We further evaluated the influence that the supply price shocks from the former colonial country exerts directly on the symmetries of these variables' responses to regional and global supply prices shocks. Further, we derived variance decompositions of changes in the convergence variables to evaluate the contribution of each specific imports supply price shock. Finally, we derived the convergence variables' impulse responses to a unit regional supply price shock given parallel supply price shocks from each of the former colonial countries.

4.2.1 Symmetries of Convergence Variables' Responses to Imports Supply Price Shocks

To detect symmetries of member countries' inflation, fiscal policy, and monetary policy responses to the supply price shocks, we deducted pair-wise correlation coefficients of the derived time series of structural shocks. There is symmetry if the coefficient is equal to 0.5 or higher and asymmetry when it is less than 0.5 or negative. In other words, two member countries have symmetric variable responses to an imports supply price shock if the structural shock they receive is positively and highly correlated.

4.2.1.1 Symmetries of Inflation Responses to External Supply Price Shocks

Tables 1 through 3 display the inflation responses to external supply price shocks. The estimated correlation coefficients of structural shocks reveal a predominance of former French colonies, except for Benin and Guinea, paired by symmetric inflation responses to supply price shocks from France, Portugal, or the UK. However, they are more predominant to price shocks from France. But only the pair Senegal-Togo persisted with symmetric inflation responses to price shocks from all three former colonial countries. Guinea, the non-WAEMU former French colony systematically had asymmetric inflation responses with others. On the contrary, Cape Verde, a former Portuguese colony, member of the WAEMU, had as much symmetric inflation responses with others. Thus, such a predominance can only be attributed to the CFA effect, which refers to the tendency of the WAEMU countries to share more symmetric inflationary and monetary shocks among themselves than with the WAMZ countries, owing to the link between the CFA franc and the French franc and now the Euro (Houssa, 2008; Chuku, 2012; Fielding and Shields, 2001). Inversely, most pairs of the WAMZ countries had asymmetric inflation responses to supply price shocks from the former colonial countries. Nevertheless, former French colonies had equally symmetric inflation responses with others.

Pairs of former French colonies also predominated with symmetric inflation responses to regional supply price shocks given parallel supply price shocks from France and Portugal (Tables A4, A5, and A6). Only the pairs Cape Verde-Liberia and Gambia-Senegal also had symmetric inflation responses to regional supply price shocks given parallel price shocks from the UK. It remains that the symmetries of these countries' inflation responses are also attributable to the proximity effect, a tendency for countries with close proximity to be affected by similar shocks (Brada *et al.*, 2004). The sizes of the paired economies are also critical since contrary to Ghana and Nigeria, the Gambia, Guinea, and Liberia with smaller economies had symmetric inflation responses to regional price shocks with their WAEMU neighbors.

The predominance of pairs of former French colonies persisted to symmetric inflation responses to global price shocks given parallel price shocks from France and Portugal (Tables A7, A8, and A9). Similarly, the former French colonies had symmetric inflation responses to global price shocks with each other, with the exception of Benin and Bissau Guinea. As a result, each former British colony and each former Portuguese colony had symmetric inflation responses to global price shocks with at least one other regional country. In all, the results

indicate that the inflation responses of most of the member countries are more synchronized to global price shocks than to price shocks from both the region and their former colonial countries.

4.2.1.2 Symmetries of Fiscal Policy Responses to External Supply Price Shocks

The results show that only pairs of former French colonies had symmetric fiscal policy responses to supply price shocks from former colonial countries with the exception of the pair Bissau Guinea-Mali (Tables A10, A11, and A12). For the pair Burkina Faso-Niger, the symmetric responses to price shocks from all three former colonial countries persisted. While this predominance of former French colonies is attributable to the CFA effect, it may be however due mainly to the long-time dependency of WAEMU member countries on cash advances for budget financing from France. The effect of France's price fluctuations on their fiscal policies, transmitted through the CFA franc, did not stop with the substitution of the cash advances mechanism with their own issuances of government securities, largely purchased by French investors. It is therefore not surprising that all non-former French colonies had asymmetric fiscal policy responses to price shocks from the three former colonial countries.

Similarly, only pairs of former French colonies had symmetric fiscal policy responses to regional price shocks given parallel price shocks from France, Portugal, or the UK (Tables A13, A14, and A15). The pairs include Burkina Faso-Cote d'Ivoire, Burkina Faso-Niger, Burkina Faso-Senegal, Burkina Faso-Togo, Cote d'Ivoire-Niger, Cote d'Ivoire-Senegal, Cote d'Ivoire-Togo, Niger-Togo, and Senegal-Togo. The same pairs of former French colonies persisted with symmetric fiscal policy responses, along with Bissau Guinea-Mali, to global price shocks given parallel price shocks from all three former colonial countries (Tables A16, A17, and A18). Nevertheless, the symmetries of the pairs Guinea-Sierra Leone and Bissau Guinea-Mali fiscal policy responses to global price shocks, given parallel price shocks from the UK, are in part due to the proximity effect. One may conclude that both the CFA and proximity effects influenced the synchronization of member countries' fiscal policy responses to both direct and indirect import supply price shocks.

4.2.1.3 Symmetries of Monetary Policies in Response to External Supply Price Shocks

Each former French colony, except for Benin and Mali, had symmetric monetary policy responses to supply price shocks from France with at least another one (Tables A19, A20, and A21). Concurrently, some pairs of countries with different colonial heritages also had symmetric monetary policy responses to price shocks from France and the UK. They are Cape Verde-Sierra Leone, Cote d'Ivoire-the Gambia, the Gambia-Senegal, and Cape Verde-Liberia. But the sharing of symmetric responses by the Gambia and Senegal is also due to the proximity effect.

With the exception of the pair Cape Verde-Senegal, essentially former French colonies had symmetric monetary policy responses to regional supply price shocks (Tables A22, A23, and A24), given parallel price shocks from France. The sharing of symmetric monetary policy responses by the pairs Burkina Faso-Togo, the Gambia-Senegal, and Niger-Togo, given parallel price shocks from the UK, is also due to the proximity effect.

Pairs of countries of different colonial heritages had more symmetric monetary policy responses to global supply price shocks (Tables A25, A26, and A27). They mostly consist of pairs of a WAEMU member country and a WAMZ member country with a smaller economy. The pairs include Cape Verde-Sierra Leone, Cote d'Ivoire-Gambia, Gambia-Togo, and Bissau Guinea-Mali. Overall, given close proximity, WAMZ country with a smaller economy tends to share symmetric monetary responses to the imports supply price shocks with its WAEMU neighbor.

TABLE 1 - *Correlation of Prices Cycles under Colonial Country's (France) Price Shock*

	Benin	Burkina Faso	Cape Verde	Cote d'Ivoire	The Gambia	Ghana	Guinea	Bissau Guinea	Liberia	Mali	Niger	Nigeria	Senegal	Sierra Leone	Togo
Benin	1														
Burkina	0.1	1													
Cape Verde	0.1	0.0	1												
Cote d'Ivoire	0.0	-0.9	0.0	1											
Gambia	0.0	0.3	0.0	-0.3	1										
Ghana	0.0	-0.3	0.0	0.3	-0.1	1									
Guinea	-0.1	0.0	0.5	0.0	0.0	0.0	1								
Bissau Guinea	-0.3	-0.1	0.0	0.0	-0.1	0.0	0.0	1							
Liberia	0.2	0.0	-0.3	0.0	0.0	0.0	-0.6	-0.1	1						
Mali	0.2	0.2	0.0	-0.1	0.1	0.0	-0.1	-0.5	0.0	1					
Niger	0.0	0.9	0.0	-0.9	0.2	-0.4	0.0	-0.1	0.0	0.1	1				
Nigeria	-0.1	0.0	0.6	0.0	-0.1	0.2	0.3	0.0	0.0	0.0	0.0	1			
Senegal	0.0	-0.9	0.0	0.9	-0.2	0.4	0.0	0.1	0.0	-0.2	-0.9	0.0	1		
Sierra Leone	0.3	0.0	0.2	0.0	0.0	0.0	0.4	-0.1	0.0	0.0	0.0	0.2	0.0	1	
Togo	0.0	-0.9	0.0	0.9	-0.3	0.3	0.0	0.1	0.0	-0.2	-0.9	0.0	0.9	0.0	1

Source: Authors' own estimations based on data from the IFS and the WDI.

TABLE 2 - *Correlation of Prices Cycles under colonial Country's (Portugal) Price Shock*

	Benin	Burkina Faso	Cape Verde	Cote d'Ivoire	The Gambia	Ghana	Guinea	Bissau Guinea	Liberia	Mali	Niger	Nigeria	Senegal	Sierra Leone	Togo
Benin	1														
Burkina	0.0	1													
Cape Verde	-0.2	0.0	1												
Cote d'Ivoire	-0.1	0.9	0.0	1											
Gambia	-0.1	0.2	0.0	0.3	1										
Ghana	0.0	-0.7	0.0	-0.7	-0.1	1									
Guinea	0.1	0.0	0.5	0.0	0.0	0.0	1								
Bissau Guinea	0.2	0.0	0.0	0.0	0.0	0.0	-0.1	1							
Liberia	-0.1	0.0	-0.2	0.0	0.0	0.0	-0.6	0.1	1						
Mali	-0.4	0.2	0.3	0.1	0.1	0.0	0.0	-0.1	0.0	1					
Niger	0.0	-0.9	0.0	-0.9	-0.2	0.6	0.0	0.0	0.0	-0.1	1				
Nigeria	0.2	0.0	0.5	0.0	-0.1	0.1	0.3	0.1	0.0	0.1	0.0	1			
Senegal	-0.1	0.9	0.0	0.9	0.3	-0.7	0.0	0.0	0.0	0.2	-0.8	0.0	1		
Sierra Leone	0.1	0.0	0.0	0.0	-0.1	0.0	0.3	-0.1	0.1	-0.1	0.0	0.0	0.0	1	
Togo	-0.1	0.9	0.0	0.9	0.3	-0.6	0.0	0.0	0.0	0.2	-0.9	0.0	0.9	0.0	1

Source: Authors' own estimations based on data from the IFS and the WDI.

TABLE 3 - *Correlation of Prices Cycles under Colonial Country's (UK) Price Shock*

	Benin	Burkina Faso	Cape Verde	Cote d'Ivoire	The Gambia	Ghana	Guinea	Bissau Guinea	Liberia	Mali	Niger	Nigeria	Senegal	Sierra Leone	Togo
Benin	1														
Burkina Faso	0.1	1													
Cape Verde	0.2	0.0	1												
Cote d'Ivoire	0.1	0.9	0.0	1											
Gambia	0.0	-0.3	0.0	-0.3	1										
Ghana	0.0	-0.3	0.0	-0.2	0.0	1									
Guinea	-0.3	0.0	-0.6	-0.1	0.0	0.0	1								
Bissau Guinea	-0.4	0.0	0.0	-0.1	0.1	0.0	0.0	1							
Liberia	-0.4	0.0	0.2	0.0	0.0	-0.1	0.1	0.1	1						
Mali	0.2	0.1	0.3	0.1	-0.1	0.0	-0.2	-0.3	0.0	1					
Niger	0.0	0.9	0.0	0.8	-0.3	-0.3	0.0	-0.1	0.0	0.1	1				
Nigeria	-0.1	0.0	0.4	0.1	0.0	0.1	-0.3	0.1	0.0	0.1	0.0	1			
Senegal	0.0	-0.9	0.0	-0.8	0.3	0.4	0.0	0.1	0.0	-0.1	-0.9	0.0	1		
Sierra Leone	0.2	0.0	0.8	0.0	0.0	0.0	-0.6	0.0	0.1	0.3	0.0	0.3	0.0	1	
Togo	0.0	-0.9	0.0	-0.8	0.3	0.2	0.0	0.0	0.0	-0.1	-0.9	0.0	0.9	0.0	1

Source: Authors' own estimations based on data from the IFS and the WDI.

4.2.2 Variance Decompositions of Changes in Convergence Variables to Supply Price Shocks

We derived the variance decompositions of changes (VDCs) in the monetary convergence variables to evaluate the contribution of each imports supply price shock over a 10-year period. VDCs indicate the percentage of forecast variance in one variable in the SVAR model that is explained by variations in all the other variables in the system. Table 4 presents the results from the VDCs. From panel A of Table 4, it can be observed that on average, 14% of changes in inflation in ECOWAS are due to price shocks from the former colonial country, 11.9% to global price shocks, and 4.5% to regional price shocks. Turning next to the disaggregated price shocks, it can be seen that the colonial country contributed 15.3% of the changes in inflation in the former French colonies, 13.3% in the former Portuguese colonies, and 12.8% in the former British colonies, cumulating to 16.3% in WAEMU and 10.9% in WAMZ. Surprisingly, the contribution of global price shocks to changes in inflation in the former French colonies is also the highest at 16.1% compared to 8.2% in the former Portuguese colonies and 4.6% in the former British colonies, cumulating to 13.8% in WAEMU and 9.4% in WAMZ. Given these findings, one may conclude that inflation is more responsive to price shocks from former colonial countries and regional price shocks in WAEMU than in WAMZ. Though the contribution of regional price

shocks to changes in inflation in the whole region is the lowest, it is comparatively higher at 5.5% in the former French colonies compared to 2.1% in former British colonies, due to weaker responses in Ghana and Nigeria.

The results displayed in panel B of Table 4 reveal that changes in fiscal policies in ECOWAS are due to supply price shocks from the colonial countries at 10.9%, to global supply price shocks at 10.2%, and to regional supply price shocks at 5.3%. However, the contribution of regional price shocks to changes in fiscal policies is higher in WAMZ at 7.6% than in WAEMU at 3.4%. As for global supply price shocks, they contribute to changes in fiscal policies in the WAEMU and in WAMZ equally at 10.1%, though their contribution to changes in fiscal policies in the former French colonies is higher.

Panel C of Table 4 presents the results from the VDCs relative to monetary policy responses. The results show that 12.8% of changes in monetary policy in ECOWAS are due to global supply price shocks, 7.4% to supply price shocks from former colonial countries, and 3.9% to regional supply price shocks. For disaggregated results, global supply price shocks contributed to 5.3% of the changes in monetary policy in the former French colonies, to 11.4% in the former Portuguese colonies, and to 27.0% in the former British colonies. It leads to a large gap between the contributions of global supply price shocks in WAMZ (23.3%) and in WAEMU (6.3%). However, for WAEMU, the contribution by colonial countries' price shock is 4.4% while that by regional price shock is 4.0%.

TABLE 4 - *External Supply Shocks Contributions to Convergence Variables' Responses (%)*

Panel A: Inflation responses					
	CPI	Colonial price	Global price	Regional Price	Total
Former French colonies	63.0	15.3	16.1	5.5	100
Former British colonies	80.0	13.3	4.6	2.1	100
Former Portuguese colonies	74.3	12.8	8.2	4.7	100
WAEMU	65.8	16.3	13.8	4.1	100
WAMZ	74.6	10.9	9.4	5.0	100
ECOWAS	69.6	14.0	11.9	4.5	100
Panel B: Fiscal policy responses					
	Fiscal balance	Colonial price	Global price	Regional Price	Total
Former French colonies	74.6	7.4	12.5	5.6	100
Former British colonies	81.4	10.1	5.3	3.2	100
Former Portuguese colonies	72.1	11.0	10.1	6.8	100
WAEMU	78.0	8.5	10.1	3.4	100
WAMZ	68.5	13.7	10.1	7.6	100
ECOWAS	73.5	10.9	10.2	5.3	100
Panel C: Monetary policy responses					
	Money supply	Colonial price	Global price	Regional Price	Total
Former French colonies	86.7	4.4	5.3	3.6	100
Former British colonies	70.4	1.1	27.0	1.7	100
Former Portuguese colonies	72.8	8.8	11.4	7.0	100
WAEMU	85.3	4.4	6.3	4.0	100
WAMZ	60.4	12.2	23.3	3.8	100
ECOWAS	76.1	7.4	12.8	3.9	100

Source: Authors' own estimations based on data from the IFS and the WDIs.

4.2.3 Impulse Responses of Convergence Variables to a Unit Regional Supply Price Shock

Finally, we evaluated each monetary convergence variable's impulse responses to a unit regional supply price shock given parallel price shocks from France, Portugal, or the UK. Figures 1 through 3 graphically display the results from the impulse response functions (IRFs). IRFs gauge the effect of one standard deviation innovation of a variable on the current and future values of the variables in a system of equations. The IRFs show that globally, the variables adjusted to the regional supply shock at different speeds and different magnitudes to cluster member countries, with comparable response paths, into subgroups. In their subgroup, Cote d'Ivoire, Senegal, and Togo have comparable inflation response paths given parallel price shocks

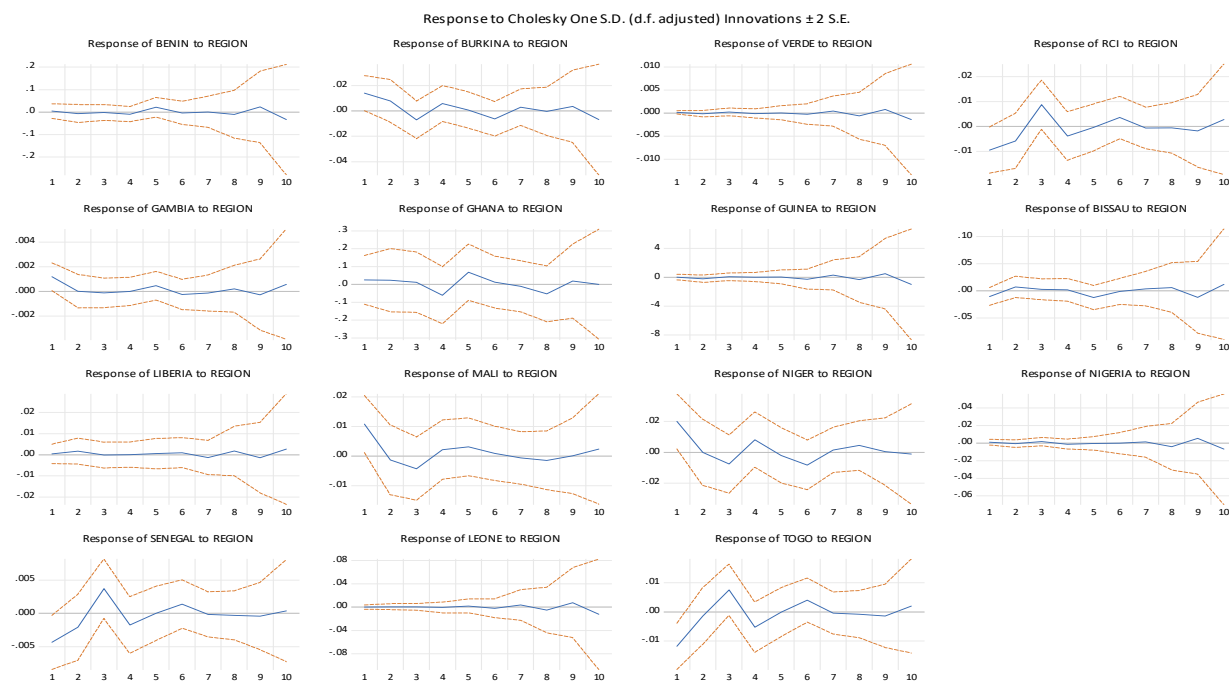
from the former colonial countries. In the subgroup of Burkina Faso, Mali, and Niger, they also have comparable inflation response paths across parallel supply price shocks. As for WAMZ countries, the pairs Gambia-Ghana, Bissau Guinea-Liberia, and Guinea-Nigeria persisted in the same subgroups with comparable inflation response paths across all parallel price shocks. But globally, the shock has a long run effect on inflation which barely phases out. The fact that in the same subgroup the magnitudes of countries' responses differ widely, suggests a lack of inflation convergence among them.

Likewise, the regional price shock has a long run effect on fiscal policy (Figures A4, A5, and A6) which barely phases out. Countries in the same subgroup exhibit different magnitudes of their responses to suggest a lack of fiscal policy convergence among them. The trio Benin-Bissau Guinea-Guinea persisted with comparable monetary policy response paths given parallel price shocks from France and Portugal (Figures A7, A8, and A9). The shock has a long run effect on monetary policy, which barely phases out while the countries exhibit different magnitudes of their responses, the indication of a lack of monetary policy convergence among them.

5. DISCUSSIONS

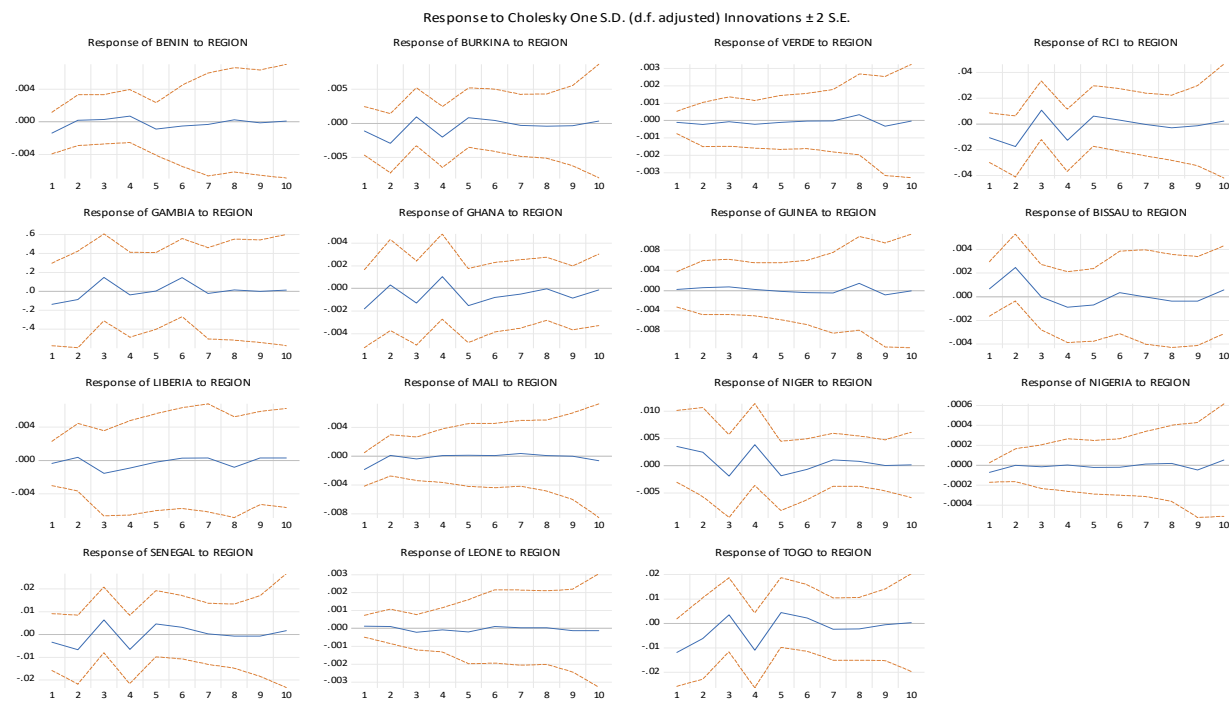
Results of empirical estimations reveal a predominance of pairs of former French colonies, except for Benin and Guinea, with symmetric inflation, fiscal policy, and monetary policy responses to the supply price shocks. The predominance of symmetric responses among former French colonies persists to regional and global supply price shocks, given parallel price shocks from France and Portugal. Since, these two former colonies are also members of the euro land, that predominance can only be attributable to the CFA effect. It explains the more converging pattern among WAEMU countries. The most compelling fact is that, contrary to Guinea, Cape Verde had as much symmetric inflation responses with the other countries as any other former French colonies of WAEMU. Inversely, all pairs of former British and former Portuguese colonies of WAMZ only shared asymmetric inflation responses. It, therefore, transpires that the CFA franc undermines the effects of regional and global supply prices on the region's economies, pulling WAEMU countries away from the rest. Early findings in the literature also stress the strong influence the CFA franc exerts on the economic and monetary relations between ECOWAS member countries (Houssa, 2008; Chuku, 2012). Thus, it can be argued that the CFA franc reduces the potential of the region to achieve monetary policy convergence.

FIGURE 1 - *Impulse Responses of Inflation to a Regional Price Shock Given Price Shocks from France*



Source: Authors' own estimations based on data from the IFS and the WDIs.

FIGURE 2 - *Impulse Responses of Inflation to a Regional Price Shock Given Price Shocks from Portugal*



Source: Authors' own estimations based on data from the IFS and the WDIs.

FIGURE 3: *Impulse Responses of Inflation to a Regional Price Shock Given Price Shocks from the UK*



Source: Authors' own estimations based on data from the IFS and the WDIs.

The results also identified the proximity effect as a determinant of the symmetries of the convergence variables' responses to the import supply price shocks, especially among pairs of countries of different colonial heritages. But, given a close proximity, symmetries of monetary responses among the WAEMU economies and a WAMZ economy seems to depend on the size of the later. That may reflect stronger interdependencies between smaller WAMZ economies and their close WAEMU neighbors through bilateral trade. That does not seem to be the case between the larger WAMZ economies (Ghana and Nigeria) and their close WAEMU neighbors. Worth noticing is the importance of trade as a channel of symmetric responses to shocks. For example, examining the extent to which macroeconomic variables of the EU members and transition economies were cointegrated, Brada *et al.*, (2004) revealed the important role trade plays in mirroring one country's price movement in others.

Variance decompositions of changes in the convergence variables show that in ECOWAS, global supply price shocks contribute the most to changes in inflation. Supply price shocks from

colonial countries and global supply price shocks contribute equally the most to changes in fiscal policies. Global supply price shocks contribute the most to changes in monetary policies. But, the fact that global supply price shocks are the most influential of changes in the monetary convergence variables leads to question whether the pegging of the CFA franc to the euro alone is an optimal monetary arrangement. In WAEMU, global supply price shocks contribute more to changes in monetary policies than price shocks from the colonial countries and regional price shocks. It is an indication that member countries probably exchange less with former colonial countries and WAMZ countries than with the rest of the world.

Globally, the impulse response functions indicate that the monetary convergence variables adjusted to the unit regional supply price shock at different speeds and different magnitudes, clustering member countries with comparable response paths into subgroups. But there are significant gaps in the magnitudes of their responses. Moreover, the long-run effect the price shock exerts on them, given parallel supply price shocks from France, Portugal, or the UK, barely phased out overtime. One can conclude from these results that there is a lack of convergence among the countries. It also comes clear that the parallel supply price shocks from France, Portugal, or the UK either contributed to the disparities in the responses or, at least, didn't reduce them, signaling that inherited colonial economic and monetary ties are not enzymatic to the monetary unification of the region.

5. CONCLUSIONS

In this paper, we investigated the impact inherited colonial economic and monetary ties of ECOWAS member countries exert on its monetary unification. Specifically, we tested the symmetries of their inflation, fiscal policy, and monetary policy responses to import supply price shocks from their former colonial countries (i.e., France, Portugal, and the UK), regional import supply price shocks, and global import supply price shocks. We also tested the indirect influence supply price shocks from each former colonial country exerts on the symmetries of these convergence variables' responses to regional and global supply price shocks. The results reveal that, globally, member countries had more symmetric variables' responses to supply price shocks from former colonial countries and global supply shocks than from regional supply price shocks. The predominance of symmetric responses among pairs of former French colonies is attributable to the CFA effect. Concurrently, symmetric variable responses among countries of

different colonial heritages are due to the proximity effect. In addition, given a close proximity, the sizes of the paired economies are also consequential in explaining the symmetric responses. Variance decomposition of changes in the convergence variables indicate that global supply price shocks contributed the most to changes in inflation. Supply price shocks from colonial countries and global supply price shocks contributed equally the most to changes in fiscal policies. Global supply price shocks contributed the most to changes in monetary policies. Impulse responses of the monetary convergence variables to a one-unit regional supply price shock cluster member countries around comparable response paths in subgroups. There is an indication of no inflation, fiscal policy, and monetary policy convergences among the countries since the supply price shock exerts a barely phasing out long-term effect on the variables. Also, the magnitudes of their responses differ widely given parallel price shocks from France, Portugal, or the UK. Thus, these findings offer evidence that inherited colonial monetary ties do not facilitate monetary convergences in the region.

In all, our results suggest that “one-size-fits-all” policies may not be supportive of monetary unification relative to ECOWAS. Inversely, convergence promoting measures should be tailored to improve the synchronicity of responses within each subgroup to be followed by measures to integrate the subgroups. However, an extension of the investigation to the real sector variables or real convergence variables may provide all-encompassing results.

REFERENCES

- Acocella, N. (2020), “How to Reform the EU and EMU”, *Economia Internazionale/International Economics*, 73(3), 325-350.
- Anoruo, E. (2019), “Testing for Convergence in Per Capita Income within ECOWAS”, *Economia Internazionale/International Economics*, 72(4), 493-512.
- Asongu, S., J. Nwachukwu and V. Tchamyou (2017), “A Literature Survey on Proposed African Monetary Unions”, *Journal of Economic Surveys*, 31(3), 878-902.
- Blanchard, O.J. and D. Quah (1989), “The Dynamic Effects of Aggregate Demand and Supply Disturbances”, *American Economic Review*, 79(4), 655-673.
- Brada, J.C., A.M. Kutan and T.M. Yigit (2004) “The Effects of Transition and Political Instability on Foreign Direct Investment Inflows: Central Europe and the Balkans”, William Davidson Institute Working Paper No. 729.
- Buigut, S.K. and N.T. Valev (2005), “Is the Proposed East African Monetary Union an Optimal Currency Area? A Structural Vector Autoregression Analysis”, *World Development*, 33(12), 2119-2133.
- Chow, H.K. and Y. Kim (2003), “A Common Currency Peg in East Asia? Perspectives from Western Europe”, *Journal of Macroeconomics*, 25(3), 331-350.
- Chuku, C. (2012), “The Proposed Eco: Should West Africa Proceed with a Common Currency?”, MPRA Paper No. 43739.
- Chukwu, D.O. and J.G. Nkem Onyekpe (2014), “Economic Integration: Does Modern West Africa Need Any Historical Lesson?”, *Researchers World; Malegaon*, 5(4), 188-198.
- Davidson, B. (1992), *The Blackman’s Burden: Africa and the Curse of the Nation-State*, 1st ed., Times Books: New York.
- De Grauwe, P. and F. Mongelli (2005), “Endogeneities of Optimum Currency Areas: What Brings Countries Sharing a Single Currency Closer Together?”, ECB Working Paper No. 468.
- Drummond, P., A. Aisen, E. Alper, E. Fuli and S. Walker (2015), “Toward a Monetary Union in the East African Community. Asymmetric Shocks, Exchange Rates, and Risk-Sharing Mechanisms”, The African Department, International Monetary Fund.
- Fielding, D. and K. Shields (2001), “Modeling Macroeconomic Shocks in the CFA Franc Zone”, *Journal of Development Economics*, 66(1), 199-223.

- France 24 (2021), “West African Regional Block Adopts New Plan to Launch Eco Single Currency in 2027”, issued on 19-06-2021 - 21:16.
- Harvey, S.K. and M.J. Cushing (2015), “Is West African Monetary Zone (WAMZ) a Common Currency Area?”, *Review of Development Finance*, 5(1), 53-63.
- Houssa, R. (2008), “Monetary Union in West Africa and Asymmetric Shocks: A Dynamic Structural Factor Model Approach”, *Journal of Development Economics*, 85(1-2), 319-347.
- Kenen, P.B. (1969), *The Theory of Optimum Currency Area: An Eclectic View*, in: R. A. Mundell, A.K. Swoboda (Eds), “Monetary Problems of the International Economy”, The University of Chicago Press: Chicago.
- Mafusire, A. and Z. Brixiova (2012), “Macroeconomic Shock Synchronization in the East African Community”, William Davidson Institute Working Paper No. 1031.
- Mati, S., I. Civcir and H. Ozdeser (2019), “ECOWAS Common Currency: How Prepared Are its Members?”, *Investigación Económica*, 78(308), 89-119.
- McKinnon, R.I. (1963), “Optimum Currency Areas”, *The American Economic Review*, 53(4), 717-725.
- Mundell, R.A. (1961), “A Theory of Optimum Currency Areas”, *The American Economic Review*, 51(4), 657-665.
- Regmi, K., A. Nikolsko-Rzhevskyy and R. Thornton (2015), “To Be or not to Be: An Optimum Currency Area for South Asia?”, *Journal of Policy Modeling*, 37(6), 930-944.
- Rusuhuzwa, T.K. and P.R. Masson (2013), “Design and Implementation of a Common Currency Area in the East African Community”, *African Journal of Business Management*, 7(35), 3575-3590.
- Saka, J.O., I.A. Onafowokan and A.A. Adebayo (2015), “Analysis of Convergence Criteria in a Proposed Monetary Union: A Study of the Economic Community of West African States”, *International Journal of Economics and Financial Issues*, 5(1), 230-239.
- Simons, D. and R. Jean Louis (2018), “Monetary Union in West Africa and Business Cycles Synchronicity: New Evidence”, *The World Economy*, 41(10), 2828-2848.
- Yuen, H. and P. Ling (2001), “Optimum Currency Areas in East Asia: A Structural VAR Approach”, *ASEAN Economic Bulletin*, 18(2), 206-217.
- Zhang, Z., K. Sato and M. McAleer (2004), “Asian Monetary Integration: A Structural VAR Approach”, *Mathematics and Computers in Simulation*, 64(3-4), 447-458.

APPENDIX

TABLE A4 - *Correlation of Price Reactions to Regional Price Shock in Presence of France Price Shock*

	Benin	Burkina Faso	Cape Verde	Cote d'Ivoire	The Gambia	Ghana	Guinea	Bissau Guinea	Liberia	Mali	Niger	Nigeria	Senegal	Sierra Leone	Togo
Benin	1.0														
Burkina	0.1	1.0													
Cape Verde	-0.1	0.0	1.0												
Cote d'Ivoire	0.0	0.9	0.0	1.0											
Gambia	0.0	0.3	0.0	0.3	1.0										
Ghana	0.0	-0.3	0.0	-0.3	-0.1	1.0									
Guinea	-0.1	0.0	-0.5	0.0	0.0	0.0	1.0								
Bissau Guinea	-0.3	-0.1	0.0	0.0	-0.1	0.0	0.0	1.0							
Liberia	-0.2	0.0	-0.3	0.0	0.0	0.0	0.6	0.1	1.0						
Mali	0.2	0.2	0.0	0.1	0.1	0.0	-0.1	-0.5	0.0	1.0					
Niger	0.0	0.9	0.0	0.9	0.2	-0.4	0.0	-0.1	0.0	0.1	1.0				
Nigeria	-0.1	0.0	-0.6	0.0	-0.1	0.2	0.3	0.0	0.0	0.0	0.0	1.0			
Senegal	0.0	0.9	0.0	0.9	0.2	-0.4	0.0	-0.1	0.0	0.2	0.9	0.0	1.0		
Sierra Leone	-0.3	0.0	0.2	0.0	0.0	0.0	-0.4	0.1	0.0	0.0	0.0	-0.2	0.0	1.0	
Togo	0.0	0.9	0.0	0.9	0.3	-0.3	0.0	-0.1	0.0	0.2	0.9	0.0	0.9	0.0	1.0

Source: Authors' own estimations based on data from the IFS and the WDIs.

TABLE A5 - *Correlation of Price Reactions to Regional Price Shock in Presence of Portugal Price Shock*

	Benin	Burkina Faso	Cape Verde	Cote d'Ivoire	The Gambia	Ghana	Guinea	Bissau Guinea	Liberia	Mali	Niger	Nigeria	Senegal	Sierra Leone	Togo
Benin	1.0														
Burkina	0.0	1.0													
Cape Verde	-0.2	0.0	1.0												
Cote d'Ivoire	0.1	0.9	0.0	1.0											
Gambia	0.1	0.2	0.0	0.3	1.0										
Ghana	0.0	-0.7	0.0	-0.7	-0.1	1.0									
Guinea	-0.1	0.0	-0.5	0.0	0.0	0.0	1.0								
Bissau Guinea	0.2	0.0	0.0	0.0	0.0	0.0	0.1	1.0							
Liberia	-0.1	0.0	-0.2	0.0	0.0	0.0	0.6	0.1	1.0						
Mali	0.4	0.2	-0.3	0.1	0.1	0.0	0.0	0.1	0.0	1.0					
Niger	0.0	0.9	0.0	0.9	0.2	-0.6	0.0	0.0	0.0	0.1	1.0				
Nigeria	-0.2	0.0	-0.5	0.0	-0.1	0.1	0.3	-0.1	0.0	0.1	0.0	1.0			
Senegal	0.1	0.9	0.0	0.9	0.3	-0.7	0.0	0.0	0.0	0.2	0.8	0.0	1.0		
Sierra Leone	0.1	0.0	0.0	0.0	0.1	0.0	-0.3	-0.1	0.1	0.1	0.0	0.0	0.0	1.0	
Togo	0.1	0.9	0.0	0.9	0.3	-0.6	0.0	0.0	0.0	0.2	0.9	0.0	0.9	0.0	1.0

Source: Authors' own estimations based on data from the IFS and the WDIs.

TABLE A6 - *Correlation of Price Reactions to Regional Price Shock in Presence of UK Price Shock*

	Benin	Burkina Faso	Cape Verde	Cote d'Ivoire	The Gambia	Ghana	Guinea	Bissau Guinea	Liberia	Mali	Niger	Nigeria	Senegal	Sierra Leone	Togo
Benin	1.0														
Burkina	0.0	1.0													
Cape Verde	-0.2	0.0	1.0												
Cote d'Ivoire	-0.1	-0.3	-0.1	1.0											
Gambia	-0.1	-0.4	0.0	0.3	1.0										
Ghana	-0.1	0.1	0.0	-0.1	0.0	1.0									
Guinea	0.1	0.0	-0.4	0.0	0.1	0.0	1.0								
Bissau Guinea	-0.6	-0.1	-0.1	0.1	0.3	0.0	-0.2	1.0							
Liberia	0.2	0.0	0.7	-0.1	-0.1	0.0	-0.4	-0.4	1.0						
Mali	0.4	0.0	-0.1	0.2	-0.2	0.0	0.1	-0.4	0.1	1.0					
Niger	0.0	0.4	0.0	-0.1	-0.4	-0.4	0.0	0.0	0.0	0.0	1.0				
Nigeria	-0.1	-0.1	0.1	0.3	0.0	0.1	0.0	-0.3	0.0	0.1	-0.1	1.0			
Senegal	0.0	-0.6	0.0	0.1	0.5	0.0	0.0	0.1	0.0	0.1	-0.6	0.1	1.0		
Sierra Leone	0.2	0.0	-0.1	-0.2	0.0	0.0	0.0	0.0	0.2	0.1	0.0	-0.1	0.0	1.0	
Togo	0.0	0.5	0.0	-0.2	-0.5	-0.3	0.0	-0.1	0.0	0.0	0.8	-0.1	-0.7	0.0	1.0

Source: Authors' own estimations based on data from the IFS and the WDIs.

TABLE A7 - *Correlation of Price Reactions to Global Price Shock in Presence of France Price Shock*

	Benin	Burkina Faso	Cape Verde	Cote d'Ivoire	The Gambia	Ghana	Guinea	Bissau Guinea	Liberia	Mali	Niger	Nigeria	Senegal	Sierra Leone	Togo
Benin	1.0														
Burkina	0.1	1.0													
Cape Verde	0.1	0.0	1.0												
Cote d'Ivoire	0.0	0.9	0.0	1.0											
Gambia	0.0	0.3	0.0	0.3	1.0										
Ghana	0.0	-0.3	0.0	-0.3	-0.1	1.0									
Guinea	-0.1	0.0	0.5	0.0	0.0	0.0	1.0								
Bissau Guinea	-0.3	-0.1	0.0	0.0	-0.1	0.0	0.0	1.0							
Liberia	-0.2	0.0	0.3	0.0	0.0	0.0	0.6	0.1	1.0						
Mali	-0.2	-0.2	0.0	-0.1	-0.1	0.0	0.1	0.5	0.0	1.0					
Niger	0.0	0.9	0.0	0.9	0.2	-0.4	0.0	-0.1	0.0	-0.1	1.0				
Nigeria	-0.1	0.0	0.6	0.0	-0.1	0.2	0.3	0.0	0.0	0.0	0.0	1.0			
Senegal	0.0	0.9	0.0	0.9	0.2	-0.4	0.0	-0.1	0.0	-0.2	0.9	0.0	1.0		
Sierra Leone	-0.3	0.0	-0.2	0.0	0.0	0.0	-0.4	0.1	0.0	0.0	0.0	-0.2	0.0	1.0	
Togo	0.0	0.9	0.0	0.9	0.3	-0.3	0.0	-0.1	0.0	-0.2	0.9	0.0	0.9	0.0	1.0

Source: Authors' own estimations based on data from the IFS and the WDIs.

TABLE A8 - *Correlation of Price Reactions to Global Price Shock in Presence of Portugal Price Shock*

	Benin	Burkina Faso	Cape Verde	Cote d'Ivoire	The Gambia	Ghana	Guinea	Bissau Guinea	Liberia	Mali	Niger	Nigeria	Senegal	Sierra Leone	Togo
Benin	1.0														
Burkina	0.0	1.0													
Cape Verde	0.2	0.0	1.0												
Cote d'Ivoire	-0.1	0.9	0.0	1.0											
Gambia	-0.1	0.2	0.0	0.3	1.0										
Ghana	0.0	-0.7	0.0	-0.7	-0.1	1.0									
Guinea	0.1	0.0	-0.5	0.0	0.0	0.0	1.0								
Bissau Guinea	-0.2	0.0	0.0	0.0	0.0	0.0	0.1	1.0							
Liberia	0.1	0.0	-0.2	0.0	0.0	0.0	0.6	0.1	1.0						
Mali	-0.4	0.2	-0.3	0.1	0.1	0.0	0.0	0.1	0.0	1.0					
Niger	0.0	0.9	0.0	0.9	0.2	-0.6	0.0	0.0	0.0	0.1	1.0				
Nigeria	-0.2	0.0	0.5	0.0	0.1	-0.1	-0.3	0.1	0.0	-0.1	0.0	1.0			
Senegal	0.1	-0.9	0.0	-0.9	-0.3	0.7	0.0	0.0	0.0	-0.2	-0.8	0.0	1.0		
Sierra Leone	-0.1	0.0	0.0	0.0	0.1	0.0	-0.3	-0.1	0.1	0.1	0.0	0.0	0.0	1.0	
Togo	-0.1	0.9	0.0	0.9	0.3	-0.6	0.0	0.0	0.0	0.2	0.9	0.0	-0.9	0.0	1.0

Source: Authors' own estimations based on data from the IFS and the WDIs.

TABLE A9 - *Correlation of Price Reactions to Global Price Shock in Presence of UK Price Shock*

	Benin	Burkina Faso	Cape Verde	Cote d'Ivoire	The Gambia	Ghana	Guinea	Bissau Guinea	Liberia	Mali	Niger	Nigeria	Senegal	Sierra Leone	Togo
Benin	1.0														
Burkina	0.1	1.0													
Cape Verde	0.2	0.0	1.0												
Cote d'Ivoire	0.1	0.9	0.0	1.0											
Gambia	0.0	0.3	0.0	0.3	1.0										
Ghana	0.0	-0.3	0.0	-0.2	0.0	1.0									
Guinea	0.3	0.0	0.6	0.1	0.0	0.0	1.0								
Bissau Guinea	-0.4	0.0	0.0	-0.1	-0.1	0.0	0.0	1.0							
Liberia	-0.4	0.0	0.2	0.0	0.0	-0.1	-0.1	0.1	1.0						
Mali	0.2	0.1	0.3	0.1	0.1	0.0	0.2	-0.3	0.0	1.0					
Niger	0.0	0.9	0.0	0.8	0.3	-0.3	0.0	-0.1	0.0	0.1	1.0				
Nigeria	-0.1	0.0	0.4	0.1	0.0	0.1	0.3	0.1	0.0	0.1	0.0	1.0			
Senegal	0.0	0.9	0.0	0.8	0.3	-0.4	0.0	-0.1	0.0	0.1	0.9	0.0	1.0		
Sierra Leone	0.2	0.0	0.8	0.0	0.0	0.0	0.6	0.0	0.1	0.3	0.0	0.3	0.0	1.0	
Togo	0.0	0.9	0.0	0.8	0.3	-0.2	0.0	0.0	0.0	0.1	0.9	0.0	0.9	0.0	1.0

Source: Authors' own estimations based on data from the IFS and the WDIs.

TABLE A10 - *Correlation of Fiscal Cycles under Colonial Country's (France) Price Shock*

	Benin	Burkina Faso	Cape Verde	Cote d'Ivoire	The Gambia	Ghana	Guinea	Bissau Guinea	Liberia	Mali	Niger	Nigeria	Senegal	Sierra Leone	Togo
Benin	1.0														
Burkina	0.0	1.0													
Cape Verde	0.1	0.0	1.0												
Cote d'Ivoire	-0.1	0.8	0.0	1.0											
Gambia	0.1	-0.2	0.0	-0.3	1.0										
Ghana	0.0	0.4	0.0	0.2	0.0	1.0									
Guinea	0.1	-0.1	0.1	0.0	0.1	0.0	1.0								
Bissau Guinea	0.0	0.1	0.1	0.0	-0.2	0.1	-0.1	1.0							
Liberia	0.1	0.0	-0.1	0.0	0.2	0.0	0.1	-0.3	1.0						
Mali	0.2	0.1	0.0	-0.1	-0.2	0.1	-0.3	0.7	-0.3	1.0					
Niger	-0.1	0.6	0.0	0.7	-0.4	0.2	-0.1	0.0	0.0	0.0	1.0				
Nigeria	0.1	0.1	-0.2	0.1	0.1	0.0	0.2	-0.3	0.3	-0.1	0.1	1.0			
Senegal	0.0	0.7	0.0	0.6	-0.2	0.4	0.0	-0.1	0.1	-0.1	0.5	0.0	1.0		
Sierra Leone	-0.2	0.0	0.3	0.0	0.0	0.0	-0.3	0.1	-0.2	0.1	0.0	-0.1	0.0	1.0	
Togo	0.0	0.6	0.0	0.8	-0.5	0.2	0.0	-0.1	0.0	-0.1	0.7	0.0	0.6	0.0	1.0

Source: Authors' own estimations based on data from the IFS and the WDIs.

TABLE A11 - *Correlation of Fiscal under Colonial Country's (Portugal) Price Shock*

	Benin	Burkina Faso	Cape Verde	Cote d'Ivoire	The Gambia	Ghana	Guinea	Bissau Guinea	Liberia	Mali	Niger	Nigeria	Senegal	Sierra Leone	Togo
Benin	1.0														
Burkina	-0.2	1.0													
Cape Verde	0.3	0.0	1.0												
Cote d'Ivoire	-0.1	0.7	0.0	1.0											
Gambia	-0.3	0.3	0.0	0.3	1.0										
Ghana	0.0	0.0	0.0	0.0	0.1	1.0									
Guinea	0.1	-0.1	-0.4	0.0	-0.1	0.0	1.0								
Bissau Guinea	0.3	-0.1	0.1	-0.2	-0.2	0.0	0.0	1.0							
Liberia	0.4	-0.1	0.2	0.0	-0.1	0.0	-0.1	0.4	1.0						
Mali	0.1	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.2	-0.2	1.0					
Niger	-0.1	0.6	0.0	0.7	0.4	0.1	-0.1	-0.1	0.0	-0.1	1.0				
Nigeria	-0.2	0.1	0.2	-0.1	0.2	0.0	-0.2	-0.1	-0.1	0.1	-0.1	1.0			
Senegal	0.0	-0.7	0.0	-0.6	-0.2	0.3	0.0	0.1	0.0	0.1	-0.4	0.0	1.0		
Sierra Leone	0.1	-0.1	0.3	0.0	0.0	0.0	0.5	0.1	0.2	-0.1	0.0	0.0	0.0	1.0	
Togo	0.1	-0.7	0.0	-0.8	-0.4	0.0	0.0	0.1	0.0	0.0	-0.7	0.1	0.7	0.0	1.0

Source: Authors' own estimations based on data from the IFS and the WDIs.

TABLE 12 - *Correlation of Fiscal Cycles under Colonial Country's (UK) Price Shock*

	Benin	Burkina Faso	Cape Verde	Cote d'Ivoire	The Gambia	Ghana	Guinea	Bissau Guinea	Liberia	Mali	Niger	Nigeria	Senegal	Sierra Leone	Togo
Benin	1.0														
Burkina	0.1	1.0													
Cape Verde	-0.1	0.0	1.0												
Cote d'Ivoire	0.1	0.5	0.0	1.0											
Gambia	0.3	0.3	0.0	0.1	1.0										
Ghana	0.0	0.3	0.0	0.2	0.0	1.0									
Guinea	-0.1	0.0	-0.1	0.0	-0.1	0.0	1.0								
Bissau Guinea	-0.1	0.0	0.1	-0.2	0.1	0.0	-0.3	1.0							
Liberia	-0.1	-0.1	-0.2	-0.1	-0.3	0.0	0.4	-0.3	1.0						
Mali	-0.1	0.1	0.1	-0.2	0.3	0.0	-0.3	0.7	-0.4	1.0					
Niger	0.1	0.6	0.0	0.4	0.3	0.4	0.0	-0.2	-0.1	0.0	1.0				
Nigeria	0.1	0.0	-0.3	-0.1	0.0	0.0	0.0	0.2	0.3	0.2	0.0	1.0			
Senegal	0.0	0.7	0.0	0.3	0.2	0.4	0.0	-0.2	0.0	-0.1	0.5	-0.1	1.0		
Sierra Leone	-0.1	0.0	0.4	0.0	0.1	0.0	-0.6	0.2	-0.4	0.2	0.0	-0.2	0.0	1.0	
Togo	0.1	0.7	0.0	0.5	0.4	0.3	0.0	-0.2	0.0	-0.1	0.7	0.0	0.7	0.0	1.0

Source: Authors' own estimations based on data from the IFS and the WDIs.

TABLE A13 - *Correlation of Fiscal Policy Reactions to Regional Price Shock in Presence of France Price Shock*

	Benin	Burkina Faso	Cape Verde	Cote d'Ivoire	The Gambia	Ghana	Guinea	Bissau Guinea	Liberia	Mali	Niger	Nigeria	Senegal	Sierra Leone	Togo
Benin	1.0														
Burkina	0.0	1.0													
Cape Verde	-0.1	0.0	1.0												
Cote d'Ivoire	0.1	0.8	0.0	1.0											
Gambia	-0.1	-0.2	0.0	-0.3	1.0										
Ghana	0.0	0.4	0.0	0.2	0.0	1.0									
Guinea	-0.1	-0.1	0.1	0.0	0.1	0.0	1.0								
Bissau Guinea	0.0	0.1	0.1	0.0	-0.2	0.1	-0.1	1.0							
Liberia	0.1	0.0	0.1	0.0	-0.2	0.0	-0.1	0.3	1.0						
Mali	0.2	-0.1	0.0	0.1	0.2	-0.1	0.3	-0.7	-0.3	1.0					
Niger	0.1	0.6	0.0	0.7	-0.4	0.2	-0.1	0.0	0.0	0.0	1.0				
Nigeria	-0.1	0.1	-0.2	0.1	0.1	0.0	0.2	-0.3	-0.3	0.1	0.1	1.0			
Senegal	0.0	0.7	0.0	0.6	-0.2	0.4	0.0	-0.1	-0.1	0.1	0.5	0.0	1.0		
Sierra Leone	0.2	0.0	0.3	0.0	0.0	0.0	-0.3	0.1	0.2	-0.1	0.0	-0.1	0.0	1.0	
Togo	0.0	0.6	0.0	0.8	-0.5	0.2	0.0	-0.1	0.0	0.1	0.7	0.0	0.6	0.0	1.0

Source: Authors' own estimations based on data from the IFS and the WDIs.

TABLE A14 - *Correlation of Fiscal Policy Reactions to Regional Price Shock in Presence of Portugal Price Shock*

	Benin	Burkina Faso	Cape Verde	Cote d'Ivoire	The Gambia	Ghana	Guinea	Guinea Bissau	Liberia	Mali	Niger	Nigeria	Senegal	Sierra Leone	Togo
Benin	1.0														
Burkina Faso	0.2	1.0													
Cape Verde	0.3	0.0	1.0												
Cote d'Ivoire	0.1	0.7	0.0	1.0											
Gambia	0.3	0.3	0.0	0.3	1.0										
Ghana	0.0	0.0	0.0	0.0	-0.1	1.0									
Guinea	-0.1	-0.1	0.4	0.0	-0.1	0.0	1.0								
Guinea Bissau	-0.3	-0.1	-0.1	-0.2	-0.2	0.0	0.0	1.0							
Liberia	0.4	0.1	0.2	0.0	0.1	0.0	0.1	-0.4	1.0						
Mali	0.1	0.0	0.0	0.0	0.0	-0.1	0.1	0.2	-0.2	1.0					
Niger	0.1	0.6	0.0	0.7	0.4	-0.1	-0.1	-0.1	0.0	0.1	1.0				
Nigeria	-0.2	-0.1	0.2	0.1	-0.2	0.0	0.2	0.1	-0.1	0.1	0.1	1.0			
Senegal	0.0	0.7	0.0	0.6	0.2	0.3	0.0	-0.1	0.0	0.1	0.4	0.0	1.0		
Sierra Leone	0.1	0.1	0.3	0.0	0.0	0.0	-0.5	-0.1	0.2	-0.1	0.0	0.0	0.0	1.0	
Togo	0.1	0.7	0.0	0.8	0.4	0.0	0.0	-0.1	0.0	0.0	0.7	0.1	0.7	0.0	1.0

Source: Authors' own estimations based on data from the IFS and the WDIs.

TABLE 15 - *Correlation of Fiscal Policy Reactions to Regional Price Shock in Presence of UK Price Shock*

	Benin	Burkina Faso	Cape Verde	Cote d'Ivoire	The Gambia	Ghana	Guinea	Guinea Bissau	Liberia	Mali	Niger	Nigeria	Senegal	Sierra Leone	Togo
Benin	1.0														
Burkina Faso	0.1	1.0													
Cape Verde	-0.1	0.0	1.0												
Cote d'Ivoire	0.1	0.5	0.0	1.0											
Gambia	0.3	0.3	0.0	0.1	1.0										
Ghana	0.0	0.3	0.0	0.2	0.0	1.0									
Guinea	-0.1	0.0	-0.1	0.0	-0.1	0.0	1.0								
Guinea Bissau	-0.1	0.0	0.1	-0.2	0.1	0.0	-0.3	1.0							
Liberia	0.1	0.1	0.2	0.1	0.3	0.0	-0.4	0.3	1.0						
Mali	0.1	-0.1	-0.1	0.2	-0.3	0.0	0.3	-0.7	-0.4	1.0					
Niger	0.1	0.6	0.0	0.4	0.3	0.4	0.0	-0.2	0.1	0.0	1.0				
Nigeria	0.1	0.0	-0.3	-0.1	0.0	0.0	0.0	0.2	-0.3	-0.2	0.0	1.0			
Senegal	0.0	0.7	0.0	0.3	0.2	0.4	0.0	-0.2	0.0	0.1	0.5	-0.1	1.0		
Sierra Leone	-0.1	0.0	0.4	0.0	0.1	0.0	-0.6	0.2	0.4	-0.2	0.0	-0.2	0.0	1.0	
Togo	0.1	0.7	0.0	0.5	0.4	0.3	0.0	-0.2	0.0	0.1	0.7	0.0	0.7	0.0	1.0

Source: Authors' own estimations based on data from the IFS and the WDIs.

TABLE A16 - *Correlation of Fiscal Policy Reactions to Global Price Shock in Presence of France Price Shock*

	Benin	Burkina Faso	Cape Verde	Cote d'Ivoire	The Gambia	Ghana	Guinea	Bissau Guinea	Liberia	Mali	Niger	Nigeria	Senegal	Sierra Leone	Togo
Benin	1.0														
Burkina	0.0	1.0													
Cape Verde	0.1	0.0	1.0												
Cote d'Ivoire	-0.1	0.8	0.0	1.0											
Gambia	0.1	-0.2	0.0	-0.3	1.0										
Ghana	0.0	-0.4	0.0	-0.2	0.0	1.0									
Guinea	0.1	-0.1	0.1	0.0	0.1	0.0	1.0								
Bissau Guinea	0.0	-0.1	-0.1	0.0	0.2	0.1	0.1	1.0							
Liberia	0.1	0.0	-0.1	0.0	0.2	0.0	0.1	0.3	1.0						
Mali	-0.2	-0.1	0.0	0.1	0.2	0.1	0.3	0.7	0.3	1.0					
Niger	-0.1	0.6	0.0	0.7	-0.4	-0.2	-0.1	0.0	0.0	0.0	1.0				
Nigeria	-0.1	-0.1	0.2	-0.1	-0.1	0.0	-0.2	-0.3	-0.3	-0.1	-0.1	1.0			
Senegal	0.0	0.7	0.0	0.6	-0.2	-0.4	0.0	0.1	0.1	0.1	0.5	0.0	1.0		
Sierra Leone	-0.2	0.0	0.3	0.0	0.0	0.0	-0.3	-0.1	-0.2	-0.1	0.0	0.1	0.0	1.0	
Togo	0.0	0.6	0.0	0.8	-0.5	-0.2	0.0	0.1	0.0	0.1	0.7	0.0	0.6	0.0	1.0

Source: Authors' own estimations based on data from the IFS and the WDIs.

TABLE A17 - *Correlation of Fiscal Policy Reactions to Global Price Shock in Presence of Portugal Price Shock*

	Benin	Burkina Faso	Cape Verde	Cote d'Ivoire	The Gambia	Ghana	Guinea	Bissau Guinea	Liberia	Mali	Niger	Nigeria	Senegal	Sierra Leone	Togo
Benin	1.0														
Burkina	0.2	1.0													
Cape Verde	-0.3	0.0	1.0												
Cote d'Ivoire	0.1	0.7	0.0	1.0											
Gambia	-0.3	-0.3	0.0	-0.3	1.0										
Ghana	0.0	0.0	0.0	0.0	0.1	1.0									
Guinea	0.1	0.1	0.4	0.0	-0.1	0.0	1.0								
Bissau Guinea	-0.3	-0.1	0.1	-0.2	0.2	0.0	0.0	1.0							
Liberia	0.4	0.1	-0.2	0.0	-0.1	0.0	-0.1	-0.4	1.0						
Mali	-0.1	0.0	0.0	0.0	0.0	0.1	0.1	-0.2	0.2	1.0					
Niger	0.1	0.6	0.0	0.7	-0.4	-0.1	0.1	-0.1	0.0	-0.1	1.0				
Nigeria	-0.2	-0.1	-0.2	0.1	0.2	0.0	-0.2	0.1	-0.1	-0.1	0.1	1.0			
Senegal	0.0	0.7	0.0	0.6	-0.2	0.3	0.0	-0.1	0.0	-0.1	0.4	0.0	1.0		
Sierra Leone	0.1	0.1	-0.3	0.0	0.0	0.0	0.5	-0.1	0.2	0.1	0.0	0.0	0.0	1.0	
Togo	0.1	0.7	0.0	0.8	-0.4	0.0	0.0	-0.1	0.0	0.0	0.7	0.1	0.7	0.0	1.0

Source: Authors' own estimations based on data from the IFS and the WDIs.

TABLE A18 - *Correlation of Fiscal Policy Reactions to Global Price Shock in Presence of UK Price Shock*

	Benin	Burkina Faso	Cape Verde	Cote d'Ivoire	The Gambia	Ghana	Guinea	Bissau Guinea	Liberia	Mali	Niger	Nigeria	Senegal	Sierra Leone	Togo
Benin	1.0														
Burkina Faso	-0.1	1.0													
Cape Verde	0.1	0.0	1.0												
Cote d'Ivoire	0.1	-0.5	0.0	1.0											
Gambia	0.3	-0.3	0.0	0.1	1.0										
Ghana	0.0	-0.3	0.0	0.2	0.0	1.0									
Guinea	-0.1	0.0	0.1	0.0	-0.1	0.0	1.0								
Bissau Guinea	-0.1	0.0	-0.1	-0.2	0.1	0.0	-0.3	1.0							
Liberia	0.1	-0.1	-0.2	0.1	0.3	0.0	-0.4	0.3	1.0						
Mali	-0.1	-0.1	-0.1	-0.2	0.3	0.0	-0.3	0.7	0.4	1.0					
Niger	-0.1	0.6	0.0	-0.4	-0.3	-0.4	0.0	0.2	-0.1	0.0	1.0				
Nigeria	0.1	0.0	0.3	-0.1	0.0	0.0	0.0	0.2	-0.3	0.2	0.0	1.0			
Senegal	0.0	0.7	0.0	-0.3	-0.2	-0.4	0.0	0.2	0.0	0.1	0.5	0.1	1.0		
Sierra Leone	0.1	0.0	0.4	0.0	-0.1	0.0	0.6	-0.2	-0.4	-0.2	0.0	0.2	0.0	1.0	
Togo	-0.1	0.7	0.0	-0.5	-0.4	-0.3	0.0	0.2	0.0	0.1	0.7	0.0	0.7	0.0	1.0

Source: Authors' own estimations based on data from the IFS and the WDIs.

TABLE A19 - *Correlation of Monetary Cycles under Colonial Country's (France) Price Shock*

	Benin	Burkina Faso	Cape Verde	Cote d'Ivoire	The Gambia	Ghana	Guinea	Bissau Guinea	Liberia	Mali	Niger	Nigeria	Senegal	Sierra Leone	Togo
Benin	1.0														
Burkina Faso	0.0	1.0													
Cape Verde	-0.1	0.0	1.0												
Cote d'Ivoire	-0.1	0.6	0.0	1.0											
Gambia	0.2	0.4	-0.1	0.6	1.0										
Ghana	-0.1	-0.2	0.0	-0.2	0.0	1.0									
Guinea	0.2	0.0	-0.4	0.0	-0.1	-0.1	1.0								
Bissau Guinea	0.4	0.1	0.1	0.2	0.4	0.1	0.0	1.0							
Liberia	0.2	0.0	0.3	0.1	0.1	0.1	-0.1	0.4	1.0						
Mali	-0.2	-0.1	0.0	-0.2	-0.4	0.0	0.0	-0.6	-0.2	1.0					
Niger	0.0	0.6	0.0	0.8	0.5	-0.1	0.0	0.2	0.0	-0.1	1.0				
Nigeria	-0.4	0.1	0.1	0.0	0.0	0.0	0.0	-0.1	-0.3	-0.1	0.0	1.0			
Senegal	0.0	0.7	0.0	0.7	0.6	-0.1	-0.1	0.2	0.0	-0.1	0.8	0.1	1.0		
Sierra Leone	-0.3	0.0	0.7	0.0	-0.1	0.0	-0.5	0.0	-0.3	0.1	0.0	0.1	0.0	1.0	
Togo	0.0	-0.7	0.0	-0.9	-0.5	0.1	0.0	-0.2	0.0	0.1	-0.8	0.0	-0.9	0.0	1.0

Source: Authors' own estimations based on data from the IFS and the WDIs.

TABLE A20 - *Correlation of Monetary Cycles under Colonial Country's (Portugal) Price Shock*

	Benin	Burkina Faso	Cape Verde	Cote d'Ivoire	The Gambia	Ghana	Guinea	Bissau Guinea	Liberia	Mali	Niger	Nigeria	Senegal	Sierra Leone	Togo
Benin	1.0														
Burkina	-0.2	1.0													
Cape Verde	0.1	0.0	1.0												
Cote d'Ivoire	0.2	0.0	0.1	1.0											
Gambia	0.0	-0.1	0.0	0.0	1.0										
Ghana	0.0	-0.2	0.4	0.1	0.1	1.0									
Guinea	0.1	0.1	0.0	-0.2	-0.1	-0.1	1.0								
Bissau Guinea	0.0	0.0	0.0	-0.2	-0.1	-0.1	0.0	1.0							
Liberia	0.2	0.1	0.2	0.2	0.0	-0.1	-0.2	-0.2	1.0						
Mali	-0.2	-0.1	0.2	-0.1	0.1	0.1	-0.3	-0.1	-0.1	1.0					
Niger	-0.2	0.3	0.1	-0.1	0.0	0.1	-0.1	-0.2	0.1	0.1	1.0				
Nigeria	0.0	-0.2	0.3	0.4	-0.3	0.3	0.0	0.1	0.0	-0.1	-0.1	1.0			
Senegal	-0.1	0.2	0.1	0.1	0.1	0.2	-0.1	-0.3	0.2	0.1	0.1	-0.1	1.0		
Sierra Leone	0.1	0.0	0.2	0.0	0.1	0.0	-0.3	0.1	0.0	0.0	0.1	0.0	0.0	1.0	
Togo	0.1	0.2	0.1	0.3	-0.1	0.0	0.0	0.1	0.0	0.0	0.3	0.1	0.3	0.1	1.0

Source: Authors' own estimations based on data from the IFS and the WDIs.

TABLE A21 - *Correlation of Monetary Cycles under Colonial Country's (UK) Price Shock*

	Benin	Burkina Faso	Cape Verde	Cote d'Ivoire	The Gambia	Ghana	Guinea	Bissau Guinea	Liberia	Mali	Niger	Nigeria	Senegal	Sierra Leone	Togo
Benin	1.0														
Burkina	0.0	1.0													
Cape Verde	-0.2	0.0	1.0												
Cote d'Ivoire	-0.1	-0.3	-0.1	1.0											
Gambia	-0.1	-0.4	0.0	0.3	1.0										
Ghana	-0.1	0.1	0.0	-0.1	0.0	1.0									
Guinea	0.1	0.0	-0.4	0.0	0.1	0.0	1.0								
Bissau Guinea	-0.6	-0.1	-0.1	0.1	0.3	0.0	-0.2	1.0							
Liberia	0.2	0.0	0.7	-0.1	-0.1	0.0	-0.4	-0.4	1.0						
Mali	0.4	0.0	-0.1	0.2	-0.2	0.0	0.1	-0.4	0.1	1.0					
Niger	0.0	0.4	0.0	-0.1	-0.4	-0.4	0.0	0.0	0.0	0.0	1.0				
Nigeria	-0.1	-0.1	0.1	0.3	0.0	0.1	0.0	-0.3	0.0	0.1	-0.1	1.0			
Senegal	0.0	-0.6	0.0	0.1	0.5	0.0	0.0	0.1	0.0	0.1	-0.6	0.1	1.0		
Sierra Leone	0.2	0.0	-0.1	-0.2	0.0	0.0	0.0	0.0	0.2	0.1	0.0	-0.1	0.0	1.0	
Togo	0.0	0.5	0.0	-0.2	-0.5	-0.3	0.0	-0.1	0.0	0.0	0.8	-0.1	-0.7	0.0	1.0

Source: Authors' own estimations based on data from the IFS and the WDIs.

TABLE A22 - *Correlation of Monetary Reactions to Regional Price Shock in Presence of France Price Shock*

	Benin	Burkina Faso	Cape Verde	Cote d'Ivoire	The Gambia	Ghana	Guinea	Bissau Guinea	Liberia	Mali	Niger	Nigeria	Senegal	Sierra Leone	Togo
Benin	1.0														
Burkina	0.0	1.0													
Cape Verde	-0.1	0.0	1.0												
Cote d'Ivoire	0.1	0.6	0.0	1.0											
Gambia	0.2	-0.4	-0.1	-0.6	1.0										
Ghana	-0.1	0.2	0.0	0.2	0.0	1.0									
Guinea	0.2	0.0	-0.4	0.0	-0.1	-0.1	1.0								
Bissau Guinea	0.4	-0.1	0.1	-0.2	0.4	0.1	0.0	1.0							
Liberia	0.2	0.0	0.3	-0.1	0.1	0.1	-0.1	0.4	1.0						
Mali	-0.2	0.1	0.0	0.2	-0.4	0.0	0.0	-0.6	-0.2	1.0					
Niger	0.0	0.6	0.0	0.8	-0.5	0.1	0.0	-0.2	0.0	0.1	1.0				
Nigeria	0.4	0.1	-0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.1	0.0	1.0			
Senegal	0.0	0.7	0.0	0.7	-0.6	0.1	0.1	-0.2	0.0	0.1	0.8	0.1	1.0		
Sierra Leone	-0.3	0.0	0.7	0.0	-0.1	0.0	-0.5	0.0	-0.3	0.1	0.0	-0.1	0.0	1.0	
Togo	0.0	0.7	0.0	0.9	-0.5	0.1	0.0	-0.2	0.0	0.1	0.8	0.0	0.9	0.0	1.0

Source: Authors' own estimations based on data from the IFS and the WDIs.

TABLE A23 - *Correlation of Monetary Reactions to Regional Price Shock in Presence of Portugal Price Shock*

	Benin	Burkina Faso	Cape Verde	Cote d'Ivoire	The Gambia	Ghana	Guinea	Bissau Guinea	Liberia	Mali	Niger	Nigeria	Senegal	Sierra Leone	Togo
Benin	1.0														
Burkina	0.2	1.0													
Cape Verde	0.1	0.0	1.0												
Cote d'Ivoire	-0.2	0.0	-0.1	1.0											
Gambia	0.0	-0.1	0.0	0.0	1.0										
Ghana	0.0	0.2	0.4	-0.1	-0.1	1.0									
Guinea	-0.1	0.1	0.0	-0.2	-0.1	0.1	1.0								
Bissau Guinea	0.0	0.0	0.0	-0.2	-0.1	0.1	0.0	1.0							
Liberia	0.2	-0.1	0.2	-0.2	0.0	-0.1	0.2	0.2	1.0						
Mali	0.2	-0.1	-0.2	-0.1	0.1	-0.1	-0.3	-0.1	0.1	1.0					
Niger	0.2	0.3	-0.1	-0.1	0.0	-0.1	-0.1	-0.2	-0.1	0.1	1.0				
Nigeria	0.0	-0.2	-0.3	0.4	-0.3	-0.3	0.0	0.1	0.0	-0.1	-0.1	1.0			
Senegal	0.1	0.2	-0.1	0.1	0.1	-0.2	-0.1	-0.3	-0.2	0.1	0.1	-0.1	1.0		
Sierra Leone	0.1	0.0	0.2	0.0	-0.1	0.0	0.3	-0.1	0.0	0.0	-0.1	0.0	0.0	1.0	
Togo	-0.1	0.2	-0.1	0.3	-0.1	0.0	0.0	0.1	0.0	0.0	0.3	0.1	0.3	-0.1	1.0

Source: Authors' own estimations based on data from the IFS and the WDIs.

TABLE A24 - *Correlation of Price Reactions to Regional Price Shock in Presence of UK Price Shock*

	Benin	Burkina Faso	Cape Verde	Cote d'Ivoire	The Gambia	Ghana	Guinea	Bissau Guinea	Liberia	Mali	Niger	Nigeria	Senegal	Sierra Leone	Togo
Benin	1.0														
Burkina	0.0	1.0													
Cape Verde	-0.2	0.0	1.0												
Cote d'Ivoire	-0.1	-0.3	-0.1	1.0											
Gambia	-0.1	-0.4	0.0	0.3	1.0										
Ghana	-0.1	0.1	0.0	-0.1	0.0	1.0									
Guinea	0.1	0.0	-0.4	0.0	0.1	0.0	1.0								
Bissau Guinea	-0.6	-0.1	-0.1	0.1	0.3	0.0	-0.2	1.0							
Liberia	0.2	0.0	0.7	-0.1	-0.1	0.0	-0.4	-0.4	1.0						
Mali	0.4	0.0	-0.1	0.2	-0.2	0.0	0.1	-0.4	0.1	1.0					
Niger	0.0	0.4	0.0	-0.1	-0.4	-0.4	0.0	0.0	0.0	0.0	1.0				
Nigeria	-0.1	-0.1	0.1	0.3	0.0	0.1	0.0	-0.3	0.0	0.1	-0.1	1.0			
Senegal	0.0	-0.6	0.0	0.1	0.5	0.0	0.0	0.1	0.0	0.1	-0.6	0.1	1.0		
Sierra Leone	0.2	0.0	-0.1	-0.2	0.0	0.0	0.0	0.0	0.2	0.1	0.0	-0.1	0.0	1.0	
Togo	0.0	0.5	0.0	-0.2	-0.5	-0.3	0.0	-0.1	0.0	0.0	0.8	-0.1	-0.7	0.0	1.0

Source: Authors' own estimations based on data from the IFS and the WDIs.

TABLE A25 - *Correlation of Price Reactions to Global Price Shock in Presence of France Price Shock*

	Benin	Burkina Faso	Cape Verde	Cote d'Ivoire	The Gambia	Ghana	Guinea	Bissau Guinea	Liberia	Mali	Niger	Nigeria	Senegal	Sierra Leone	Togo
Benin	1.0														
Burkina	0.1	1.0													
Cape Verde	0.1	0.0	1.0												
Cote d'Ivoire	0.0	0.9	0.0	1.0											
Gambia	0.0	0.3	0.0	0.3	1.0										
Ghana	0.0	-0.3	0.0	-0.3	-0.1	1.0									
Guinea	-0.1	0.0	0.5	0.0	0.0	0.0	1.0								
Bissau Guinea	-0.3	-0.1	0.0	0.0	-0.1	0.0	0.0	1.0							
Liberia	-0.2	0.0	0.3	0.0	0.0	0.0	0.6	0.1	1.0						
Mali	-0.2	-0.2	0.0	-0.1	-0.1	0.0	0.1	0.5	0.0	1.0					
Niger	0.0	0.9	0.0	0.9	0.2	-0.4	0.0	-0.1	0.0	-0.1	1.0				
Nigeria	-0.1	0.0	0.6	0.0	-0.1	0.2	0.3	0.0	0.0	0.0	0.0	1.0			
Senegal	0.0	0.9	0.0	0.9	0.2	-0.4	0.0	-0.1	0.0	-0.2	0.9	0.0	1.0		
Sierra Leone	-0.3	0.0	-0.2	0.0	0.0	0.0	-0.4	0.1	0.0	0.0	0.0	-0.2	0.0	1.0	
Togo	0.0	0.9	0.0	0.9	0.3	-0.3	0.0	-0.1	0.0	-0.2	0.9	0.0	0.9	0.0	1.0

Source: Authors' own estimations based on data from the IFS and the WDIs.

TABLE A26 - *Correlation of Monetary Reactions to Global Price Shock in Presence of Portugal Price Shock*

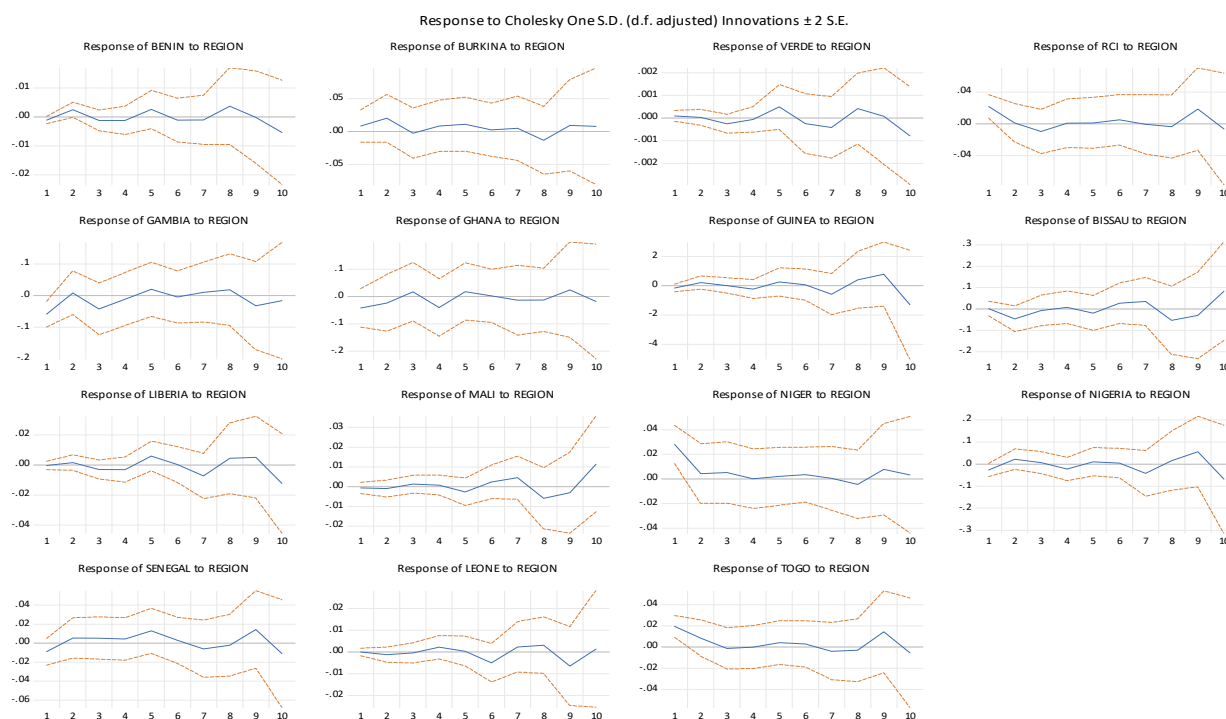
	Benin	Burkina Faso	Cape Verde	Cote d'Ivoire	The Gambia	Ghana	Guinea	Guinea Bissau	Liberia	Mali	Niger	Nigeria	Senegal	Sierra Leone	Togo
Benin	1.0														
Burkina	0.2	1.0													
Cape Verde	-0.1	0.0	1.0												
Cote d'Ivoire	-0.2	0.0	0.1	1.0											
Gambia	0.0	0.1	0.0	0.0	1.0										
Ghana	0.0	0.2	-0.4	-0.1	0.1	1.0									
Guinea	0.1	-0.1	0.0	0.2	-0.1	-0.1	1.0								
Bissau Guinea	0.0	0.0	0.0	-0.2	0.1	0.1	0.0	1.0							
Liberia	0.2	-0.1	-0.2	-0.2	0.0	-0.1	-0.2	0.2	1.0						
Mali	0.2	-0.1	0.2	-0.1	-0.1	-0.1	0.3	-0.1	0.1	1.0					
Niger	0.2	0.3	0.1	-0.1	0.0	-0.1	0.1	-0.2	-0.1	0.1	1.0				
Nigeria	0.0	-0.2	0.3	0.4	0.3	-0.3	0.0	0.1	0.0	-0.1	-0.1	1.0			
Senegal	0.1	0.2	0.1	0.1	-0.1	-0.2	0.1	-0.3	-0.2	0.1	0.1	-0.1	1.0		
Sierra Leone	0.1	0.0	-0.2	0.0	0.1	0.0	-0.3	-0.1	0.0	0.0	-0.1	0.0	0.0	1.0	
Togo	-0.1	0.2	0.1	0.3	0.1	0.0	0.0	0.1	0.0	0.0	0.3	0.1	0.3	-0.1	1.0

Source: Authors' own estimations based on data from the IFS and the WDIs.

TABLE A27 - *Correlation of Monetary Reactions to Global Price Shock in Presence of UK Price Shock*

	Benin	Burkina Faso	Cape Verde	Cote d'Ivoire	The Gambia	Ghana	Guinea	Guinea Bissau	Liberia	Mali	Niger	Nigeria	Senegal	Sierra Leone	Togo
Benin	1.0														
Burkina	0.0	1.0													
Cape Verde	0.2	0.0	1.0												
Cote d'Ivoire	0.1	-0.3	-0.1	1.0											
Gambia	-0.1	0.4	0.0	-0.3	1.0										
Ghana	-0.1	-0.1	0.0	0.1	0.0	1.0									
Guinea	0.1	0.0	0.4	0.0	0.1	0.0	1.0								
Bissau Guinea	-0.6	0.1	0.1	-0.1	0.3	0.0	-0.2	1.0							
Liberia	0.2	0.0	-0.7	0.1	-0.1	0.0	-0.4	-0.4	1.0						
Mali	0.4	0.0	0.1	-0.2	-0.2	0.0	0.1	-0.4	0.1	1.0					
Niger	0.0	0.4	0.0	-0.1	0.4	0.4	0.0	0.0	0.0	0.0	1.0				
Nigeria	-0.1	0.1	-0.1	-0.3	0.0	0.1	0.0	-0.3	0.0	0.1	0.1	1.0			
Senegal	0.0	-0.6	0.0	0.1	-0.5	0.0	0.0	-0.1	0.0	-0.1	-0.6	-0.1	1.0		
Sierra Leone	-0.2	0.0	-0.1	-0.2	0.0	0.0	0.0	0.0	-0.2	-0.1	0.0	0.1	0.0	1.0	
Togo	0.0	0.5	0.0	-0.2	0.5	0.3	0.0	0.1	0.0	0.0	0.8	0.1	-0.7	0.0	1.0

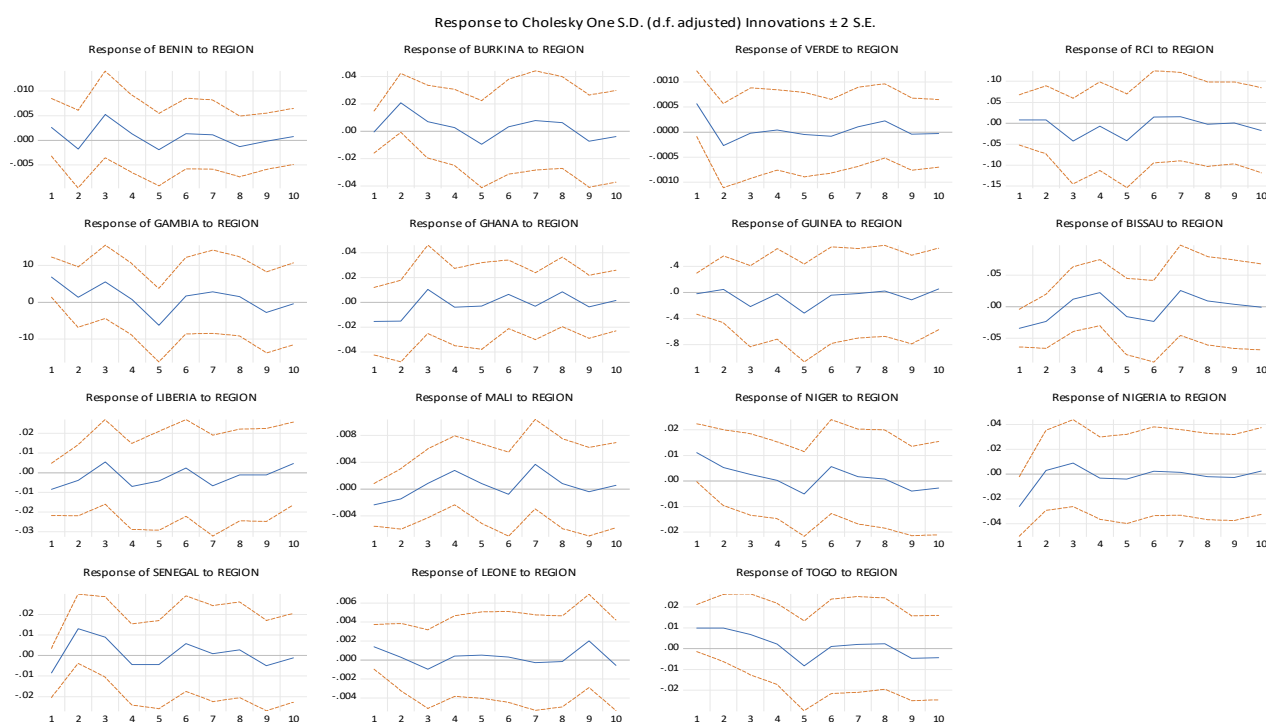
Source: Authors' own estimations based on data from the IFS and the WDIs.

FIGURE A4 - *Impulse Responses of Fiscal Policy to a Regional Price Shock Given Price Shocks from France*

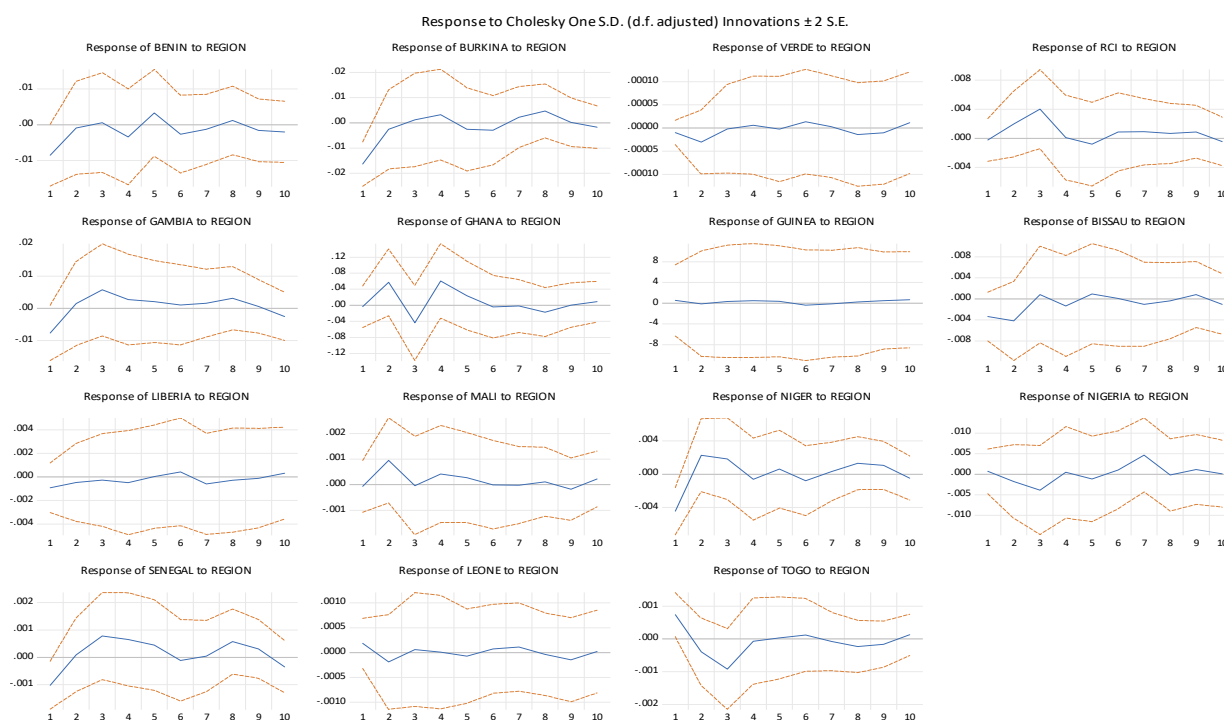
Source: Authors' own estimations based on data from the IFS and the WDIs.

FIGURE A5 - *Impulse responses of fiscal policy to a regional price shock given price shocks from Portugal*

Source: Authors' own estimations based on data from the IFS and the WDIs.

FIGURE A6 - *Impulse Responses of Fiscal Policy to a Regional Price Shock Given Price Shocks from the UK*

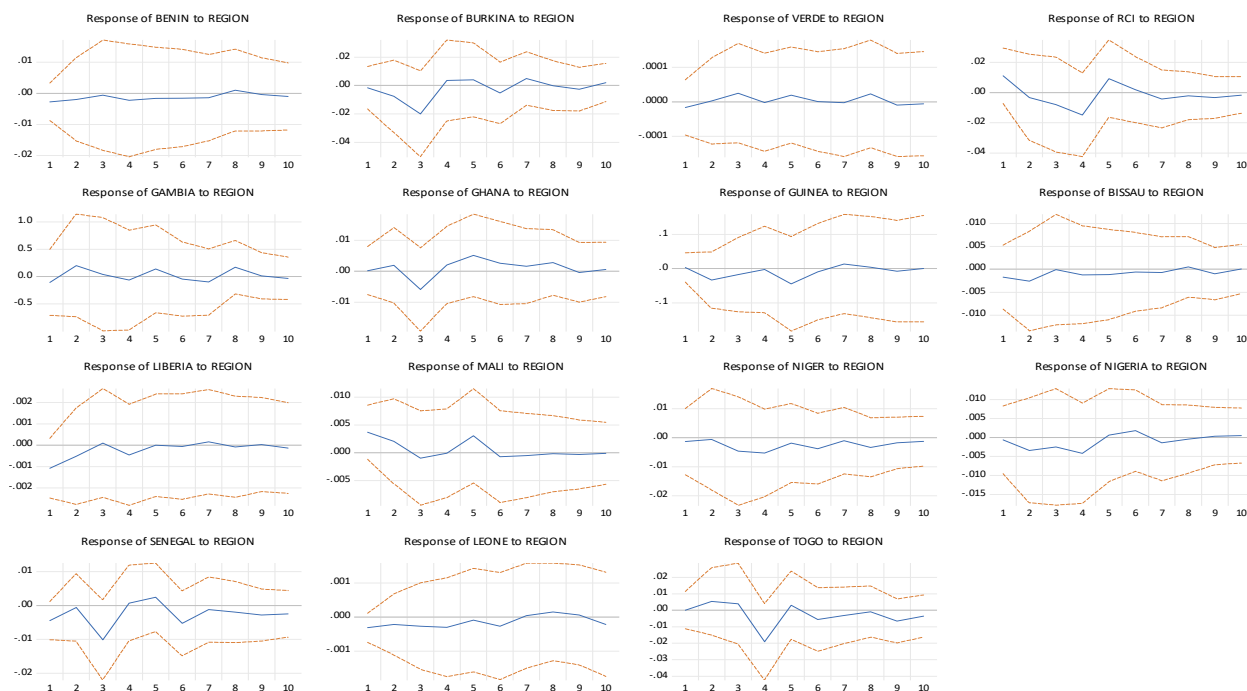
Source: Authors' own estimations based on data from the IFS and the WDIs.

FIGURE A7 - *Impulse Responses of Monetary Policy to a Regional Price Shock Given Price Shocks from France*

Source: Authors' own estimations based on data from the IFS and the WDIs.

FIGURE A8 - *Impulse Responses of Monetary Policy to a Regional Price Shock Given Price Shocks from Portugal*

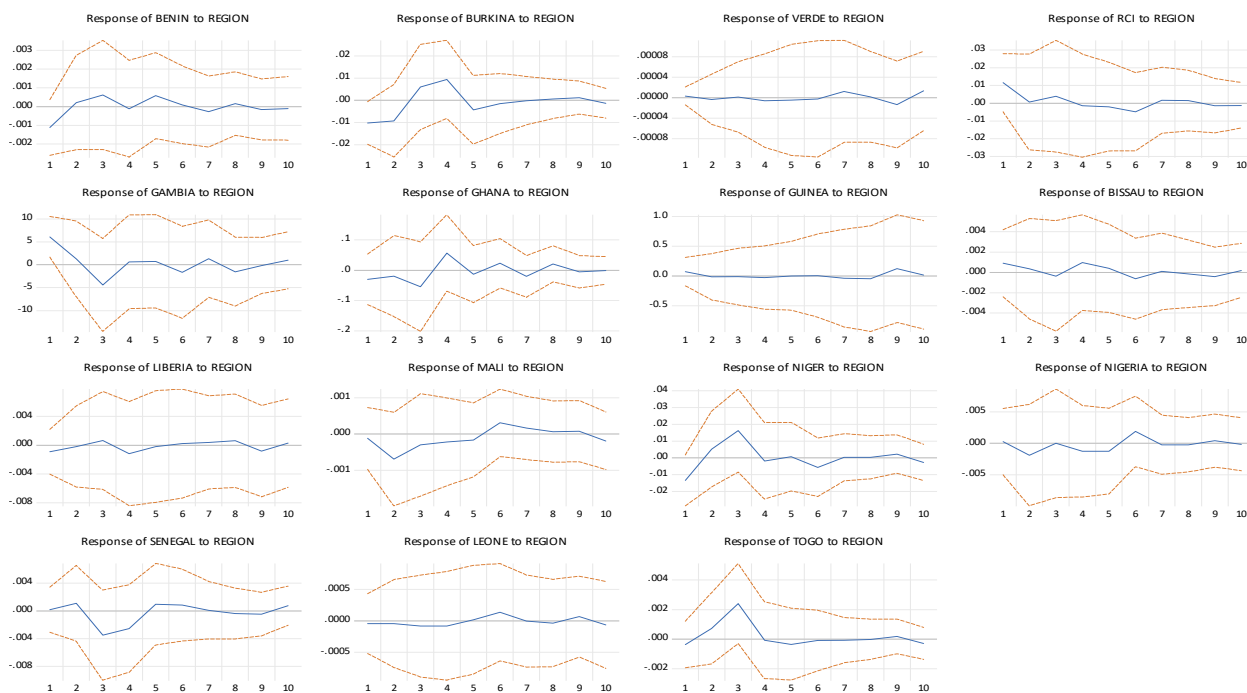
Response to Cholesky One S.D. (d.f. adjusted) Innovations ± 2 S.E.



Source: Authors' own estimations based on data from the IFS and the WDIs.

FIGURE A9 - *Impulse Responses of Monetary Policy to a Regional Price Shock Given Price Shocks from the UK*

Response to Cholesky One S.D. (d.f. adjusted) Innovations ± 2 S.E.



Source: Authors' own estimations based on data from the IFS and the WDIs.