POLICY BRIEF

Investigating the Sources of Asymmetric Growth and Inflation Shocks in the WAEMU Region

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Abstract

Empirical research has already established the existence of asymmetric shocks between the countries of the West African Economic and Monetary Union (WAEMU). The current study re-examines this issue by attempting to answer the following question: are the asymmetries within the WAEMU region related to country specific shocks or do they stem from heterogeneous responses to common shocks?

To answer this question, the study relied on the estimation of a bivariate structural VAR model for each WAEMU member country using annual data from

1997 to 2019. The results reveal weak correlations between growth shocks in WAEMU countries, while price shocks appear relatively more correlated. This situation can be explained by the existence of persistent national factors that largely determine fluctuations in real gross domestic product (GDP) and the harmonized consumer price index within the Union.

Counterfactual analyses were conducted to ascertain what the symmetry of shocks would be if they had only a specific or common component. They show that the persistence and extent of country-specific factors contribute significantly to the differences in growth and inflation rates within the WAEMU region. Moreover, shocks common to the member countries of the Union explain most of the fluctuations in the real GDP and consumer price cycle within the Union. The observed national asymmetries would not be associated with heterogeneous responses to common shocks among the Union's member countries. Rather, they are due to the persistence and significance of specific national factors. Regressions carried out on panel data from the Union countries support the persistence over time of specific factors linked to growth and inflation.

Introduction

Participation in a monetary union involves major economic stakes to the extent that monetary policy is a tool for economic adjustment and its management can promote or hinder a country’s development efforts. The importance of these issues is underscored by the theory of optimal currency area (OCA). According to this theory, exchange rate flexibility can be an effective policy instrument, capable of accommodating temporary macroeconomic asymmetries between countries. However, a country joining a monetary union loses control over the exchange rate, which is an important tool that enables national authorities to implement systematic policies to compensate for asymmetric shocks or asymmetric transmission of common shocks (Eickmeier and Breitung, 2006).

In a monetary union context characterized by development of monetary policy to a supranational authority, poorly functioning adjustment mechanisms such as wage flexibility and labour mobility may increase membership costs (De Grauwe, 2000). In this respect, the optimality of renouncing national monetary sovereignty is directly related to the level of similarity of the structural characteristics of the union's member countries and their degree of integration.

According to Zdzienicka et al. (2013), a shock that affects all members of a monetary union in a similar way can, in principle, be addressed by a common monetary policy or by a coordinated fiscal policy response. However, common monetary policy interventions cannot be an appropriate response to an asymmetric shock. For this

type of shock, a fiscal policy response (national or via fiscal transfers) remains the primary available instrument.

Synchronization of business cycles of the member countries of a monetary union is therefore crucial if they are to derive greater benefit from their union membership. Indeed, a high degree of synchronization of business cycles between member states is supposed to allow a smooth functioning of a monetary union. According to Rogoff (1985) or Clarida et al. (1999), a common monetary policy will respond more effectively to common shocks and its implementation will be easier when the economic cycles of member countries are less volatile and more synchronized. Similarly, Gayer (2007) argues that economic policy coordination would be easier and conducting a common monetary policy would be relatively easier when national business cycles are highly synchronized. To the contrary, a low degree of synchronization may increase the risk of asymmetric shocks and asymmetric transmission of common monetary policy measures across countries of the union (Altavilla, 2004).

These theoretical and empirical literature findings raise questions about the extent to which recent macroeconomic developments in the WAEMU region, particularly those related to the convergence efforts initiated since 1999, have impacted on the degree of shock symmetry between countries.

Monetary policy in the WAEMU region operates within an institutional framework governed by the monetary cooperation agreements with France. These agreements are governed by four fundamental principles. These are: the guarantee of unlimited convertibility for the CFA franc issued by the Central Bank of West African States (BCEAO); the fixed parity with the Euro; free transferability within the CFA zone; and the centralization of foreign exchange reserves. In return for the unlimited convertibility guaranteed by the French Ministry of Finance, BCEAO deposits 50% of its foreign exchange reserves in the "operations account", a special account held by the French Ministry of Finance. These agreements provide the exchange rate regime with elements of both a monetary union regime and a fixed exchange rate regime. Indeed, the exchange rate of the local currency, the CFA franc, is strictly fixed in relation to the French franc, and then to the euro from January 1999, following the adoption of the euro by France. In addition, monetary issuance is limited by the amount of foreign exchange reserves.

Overall, countries in the Union have been able to take advantage of their macroeconomic stability, improved national political institutions, investment efforts and favourable commodity prices to record strong and sustained growth performances in recent years (over 6% since 2012). In addition, the link to the Euro has permitted a low level of inflation (less than 3% per year on average). Moreover, the fiscal discipline imposed through the convergence criteria has made it possible, in a context of improving terms of trade, to maintain budget deficit ratios below 3%.

However, the WAEMU region does not meet all the criteria necessary for an optimal currency zone. According to BCEAO (2012), the economic cycles of WAEMU countries are not synchronized due to several structural factors. The structure of their economies subjects them to specific internal and external shocks. Indeed, all these economies are highly concentrated in the production and, above all, the export of a limited range of primary goods with little processing. Such an economic structure makes the countries of the Union vulnerable to external shocks and to climatic conditions to the extent that agricultural production depends on rainfall. These shocks are reportedly frequent and, to a large extent, asymmetric (Basdevant et al., 2015). In addition, the sub-region has also experienced recurrent socio-political turbulence that has had a significant impact on economic activity (IMF, 2013b).

On the other hand, there are clear signs of heterogeneity within the Union and economic integration in the region has been limited (IMF, 2013a). More specifically, the economic structures in place are still characterized by disparities. Indeed, the Sahelian economies of the Union (Burkina, Mali, and Niger)—highly susceptible to climatic hazards—are different from the coastal economies whose performance depends greatly on external trade (Benin and Togo). Côte d'Ivoire and Senegal form a third group of economies that are relatively more industrialized and strongly dominated by the tertiary sector and primarily by activities in the service sector.

These structural characteristics have warranted the establishment of convergence policies within the Union. Efforts undertaken by the Union States within the framework of the Convergence, Stability, Growth and Solidarity Pact (CSGP) constitute potential levers to bring the economic cycles of the different countries of the Union into a common state of play. This multilateral surveillance mechanism, which has been in place since 1999, includes key criteria relating to the ratio of the basic budget balance to nominal GDP (≤3%), the average annual inflation rate (≤3%), the ratio of outstanding domestic and external debt to nominal gross domestic product (GDP) (<70%) and the non-accumulation of payment arrears. This could contribute to a synchronization of economic cycles. Indeed, according to Frankel and Rose (1998), business cycle synchronization can be endogenous and increase over time with the level of economic integration within a monetary union. In particular, the efforts made since 1999 within the framework of the Convergence, Stability, Growth and Solidarity Pact (CSGP) could have favoured a better synchronization of the economic cycles among WAEMU countries.

This study focuses on the recent asymmetry of shocks between WAEMU member countries. This emphasis is due to the macroeconomic reforms carried out during this period, which could bring the national economic cycles within the Union into convergence. Furthermore, the paper attempts to answer a question which was not addressed by previous studies. Indeed, studies dealing with shock asymmetry in the WAEMU region have been limited to calculating the correlation between shocks affecting

the different member countries of the Union. However, these empirical results give little indication as to the sources of the asymmetry of shocks within the Union. Thus, the objective of this was twofold. First, it sought to reassess the asymmetry of shocks in the WAEMU region, based on annual data taken from 1997 to 2019. Second, it looks at the sources of the asymmetry by assessing the relative contributions of common and country-specific shocks to economic growth and inflation fluctuations.

In summary, this study differs from the previous ones in two main aspects. First, it uses a methodological approach borrowed from Giannone and Reichlin (2006) and Stavrev (2007, 2008) to explore the sources of shock asymmetries between WAEMU member countries. These are two bivariate structural vector autoregressive (SVAR) model for each member country of the Union, one for growth and another for inflation. These models are estimated using data from 1997 to 2019. Second, the study helps answer the following question: is the asymmetry of shocks within the WAEMU region driven by shocks specific to member countries or by varied responses to common shocks? Thirdly, the impact of convergence policy reforms and the persistence of country-specific factors in the Union are addressed. The rest of the paper is presented as follows. Section 2 is devoted to the empirical

Stylized facts of the WAEMU economies

WAEMU countries all depend on the production and export of primary goods with minimal processing. Beyond these common characteristics, disparities remain between the member economies of the Union. Indeed, data in Table 1 suggest an important role of the primary sector in GDP in all countries except Senegal (14.53%). The relative contribution of the secondary sector to national production in some countries, notably Guinea Bissau (13.46%), Benin (17.24%) and Togo (17.18%), is far below the sub-regional average (see Table 1). Côte d'Ivoire and Senegal are the economies of the Union with a relatively more advanced level of industrial development, despite the relatively high contribution of the secondary sector in Burkina Faso (22.41%).

Table 1. Contribution of economic sectors to GDP (Average from 1997 to 2019) in %

	Benin	Burkina Faso	Côte d'Ivoire	Guinea Bissau	Mali	Niger	Senegal	Togo	WAEMU
Primary Sector	27.03	25.25	19.68	36.84	31.00	34.35	14.53	24.80	22.53
Secondary Sector	17.24	22.41	20.76	13.46	21.48	19.68	23.96	17.18	20.85
Tertiary Sector	55.73	52.34	59.57	49.70	47.52	45.96	61.51	58.01	56.62

Source: Author's calculation based on BCEAO statistical publications

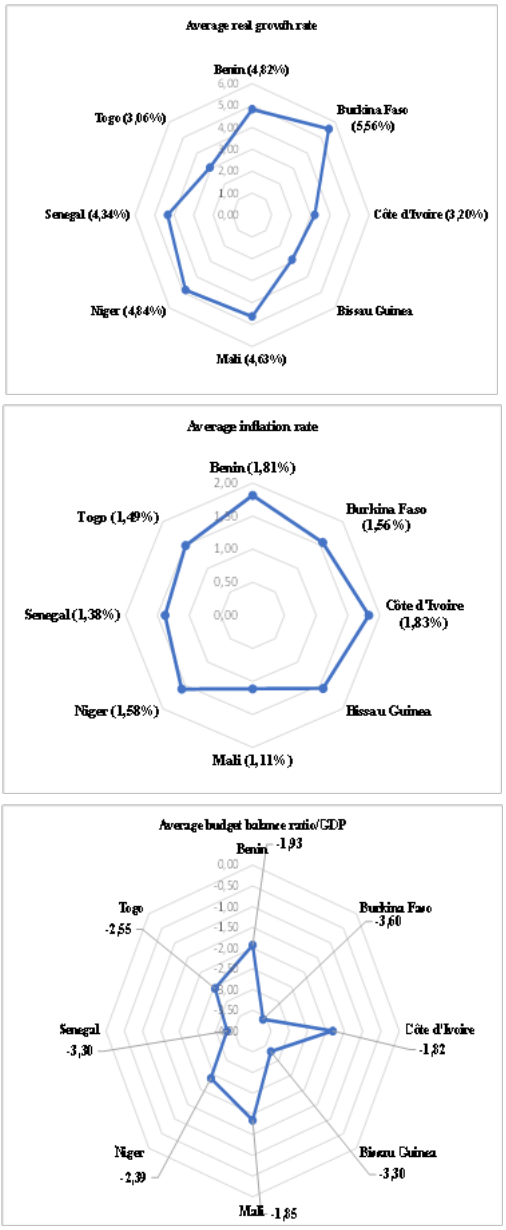
Graphical analysis of macroeconomic performance gaps

Disparities in national performance are examined by looking at five indicators. These are: the real GDP growth rate; the annual inflation rate; the basic fiscal balance/GDP ratio; the real effective exchange rate; and the external debt/GDP ratio. Polygons are constructed from individual average annual data from the eight WAEMU member countries. Problems of scale could make it difficult to compare growth rates and ratios if they were represented on the same graph. This problem is avoided by constructing the polygons by indicator. The national values of the indicators considered are obtained from the averages over the period 1997–2019.

The octagons tracing the distribution of average performance appear uneven. They reflect a divergence in national performance among the countries of the Union. In terms of real GDP growth, Burkina Faso clearly stands out from the rest of the Union with an average growth rate of 5.56%, compared with 2.98% for Guinea Bissau, 3.06% for Togo and 3.20% for Côte d'Ivoire. The relatively low average real growth rates in Guinea Bissau, Togo and Côte d'Ivoire can be explained by the socio-political unrest they experienced during the study period. Similarly, the polygon showing real effective exchange rates is very inconsistent, reflecting differences in the international competitiveness of the Union's economies and their exposure to various trade shocks. The same disparities are observed when the polygons representing the primary balance/GDP and external debt/GDP are considered (see Figure 1). Only the national inflation rates show relatively less variation. Their average national values are in the range of 1.11% and 1.83%, respectively in Mali and Côte d'Ivoire.

In summary, this graphical analysis (Figure 1) reveals the existence of gaps between national macroeconomic performances. In addition to this, national disparities are investigated, based on an analysis of the degree of business cycle and price synchronization.

Figure 1. Comparison of macroeconomic performance indicators[1]



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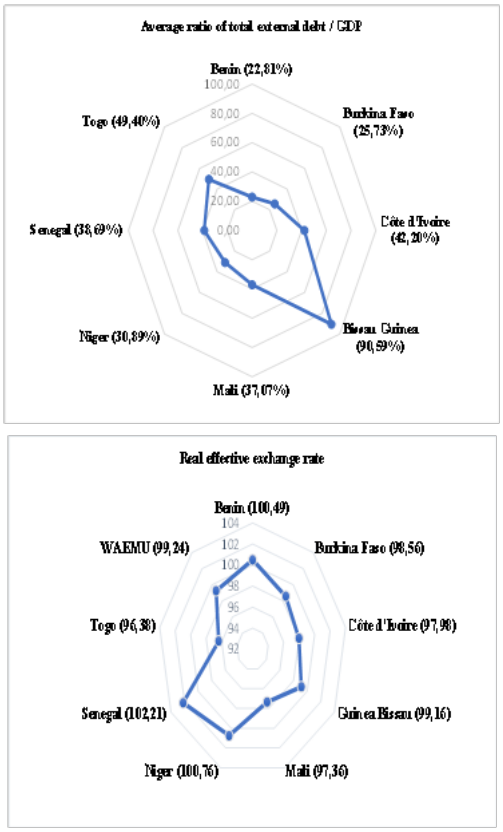
1 The average real growth rate and average inflation rate for the period are obtained from the geometrical averages of the respective annual growth rates of real GDP and the harmonized consumer price index. The average ratios for the period are obtained from the average ratios of the overall budget balances, including grants to GDP, and external debt to GDP. The average real effective exchange rates for the period are geometrical averages of the annual real effective exchange rates.

Figure 1 Continued



Note: Author's calculations from statistical publications of the Central Bank (BCEAO).

Conclusion and policy recommendations

This study re-examines the issue of asymmetric shocks in monetary unions using data from the WAEMU member countries. It is generally accepted that in the presence of asymmetric shocks, costs associated with belonging to a monetary union may exceed the benefits that a country derives from it if compensation mechanisms do not work well.

In view of the reforms undertaken since January 1994, notably the adoption of a convergence and multilateral surveillance framework, it is appropriate to question the degree of asymmetry between the member countries of the Union and to identify the sources of the dispersion of national economic performances. In this respect, this study explores the asymmetry of shocks among WAEMU countries over the recent period and attempts to answer a question not addressed by previous studies. Indeed, this work on the asymmetry of shocks in the WAEMU region has been limited to the calculation of the correlation between shocks affecting the different member countries

of the Union. This work provides little indication of the sources of the asymmetry of shocks within the Union. Thus, while revisiting the asymmetry of shocks in the Union based on annual data from 1997 to 2019, our study identifies the sources of the asymmetry by assessing the relative contributions of common and country-specific shocks to fluctuations in economic growth and inflation.

The econometric analysis was based on a bivariate structural VAR specification for each member country. The results reveal weak correlations between the growth shocks of WAEMU countries, while those affecting prices appear relatively more correlated. This situation can be explained by the existence of persistent national factors. Counterfactual analyses were also conducted under the hypothesis of the presence of common shocks or specific shocks acting alone. These analyses make it possible to affirm that idiosyncratic shocks contribute significantly to the dispersions of growth rates and inflation rates within the Union. Common shocks would explain most of the fluctuations in real GDP and consumer price cycles. Thus, the observed national asymmetries would not be linked to heterogeneous responses to common shocks but rather to the persistence and importance of specific national factors.

The persistence of specific factors is tested by estimating panel data equations of growth and inflation dispersions. The results suggest that reforms undertaken within the WAEMU region have led to greater convergence in growth and inflation rates. However, dispersion of the two indicators is persistent over time. While policy reforms have favoured convergence between the Union's member economies, structural factors are still decisive and explain the persistence of dispersions observed.

Greater symmetry of shocks is important to improve the effectiveness of a common monetary policy and to reduce opportunity costs associated with national monetary policy. From this point of view, it is important that economic policy actions be taken to reduce the asymmetries observed within the WAEMU region. This perspective requires reducing the importance of national factors that still largely determine the economies of the Union. The stylized facts presented in this study reveal that the countries in the Union do not have the same economic structures and depend on the production and export of a reduced number of goods, which differ from one Union member country to another. Thus, national economic cycles are not determined in the same way by the evolution of international commodity prices. The prospect of greater symmetry of shocks within the zone could consist of actions aimed at reducing the role of national factors, particularly socio-political shocks, in three main directions: diversification of economies; strengthening intra-zone trade to bring national economic cycles into the same phase; and consolidating the efforts undertaken in the context of the CSGP.

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