



THE FUTURE OF THE CEMAC CFA FRANC

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EXECUTIVE SUMMARY

A total of 80 currency boards have come into existence at some point since the mid-19th century, but to date only about 15 of them still exist, among which is the CFA franc monetary zone. The future sustainability of the CFA franc zone, to which the CEMAC CFA franc belongs, is increasingly questioned in the light of increasing asymmetries in exposure to external shocks, differential speeds of adjustment of the real exchange rate following shocks, differential impacts in economic fundamentals, and low levels of intra-regional trade and financial flows between CEMAC and WAEMU. For the CEMAC bloc of countries in particular, the future sustainability of the fixed exchange regime depends crucially on continued oil exports, which currently represent about 90 percent of export revenues and 40 percent of GDP. Should oil reserves deplete in the near future or oil prices decline significantly, a substantial source of foreign reserves would be lost, thereby exposing the regime to collapse. Even without resource depletion, continued volatility in global financial markets is increasing the risks of collapse of the fixed exchange regime as oil and commodity price swings ignite currency speculation as well as render reserves much more volatile. Against this backdrop, the present study examines the stakes facing the CEMAC CFA franc, discusses the exit options from the currency board and makes recommendations towards a sustainable monetary policy framework for CEMAC countries going forward. The analysis points to the imperative of pursuing a full monetary union with a single CEMAC franc pegged to the U.S. dollar and further suggests that, like the experience of the eurozone, the CEMAC monetary arrangement can be best implemented only by complying with the principle of political union.

1. INTRODUCTION

Since 1948, the African Financial Community (known by its French acronym, CFA) franc zone has existed as the monetary arrangement between France and two African regional bodies, CEMAC (Economic and Monetary Community of Central Africa) and WAEMU (Economic and Monetary Community of West Africa). CEMAC is comprised of six countries—Cameroon, Gabon, the Central African Republic, the Republic of Congo, Equatorial Guinea and Chad—and WAEMU is comprised of eight countries—Benin, Burkina Faso, Côte d’Ivoire, Senegal, Togo, Mali, Niger and Guinea-Bissau. Comoros became the fifteenth member of the CFA franc zone in 1981, but has since maintained its own independent Comorian franc. The CFA franc currency board arrangement¹ (CBA) thus links three currencies to the euro—the two CFA francs issued separately by the BEAC (Bank of the Central African States or *Banque des États de l’Afrique Centrale*), the central bank of CEMAC; the BCEAO (Central Bank of the West African States or *Banque Centrale des États de l’Afrique de l’Ouest*), the central bank of WAEMU; and the Comorian franc.² By promising to convert all CFA franc notes issued by the CEMAC and WAEMU central banks into the euro at a fixed rate, the French treasury, through an operations account, guarantees the peg of the CFA francs to the euro. In return for the “unlimited” lines of credit³ offered by the French treasury, two important institutional safeguards exist. First, at least 20 percent of sight liabilities of each central bank must be covered by foreign exchange reserves. Second, at least 50 percent of foreign exchange reserves of each member country must be held in the operations account and countries that draw on the overdraft facilities are subject to increasing interest rate penalties.

While CEMAC's total population of 36.7 million people (in 2010) makes it roughly the same size as Poland, its combined GDP of \$70.9 billion compares to that of Iraq. With the exception of Cameroon, each CEMAC country has a dominant export commodity accounting for over 80 percent of total export revenues. CEMAC countries, with the exception of the diamond-exporting Central African Republic, are net oil exporters, and their economic development is dominated by developments in the oil market. Although CEMAC's trade with the eurozone economies continues to be important, over the last two decades CEMAC countries have been trading increasingly more with China and the U.S. As Figure 1 suggests, the share of CEMAC's exports and imports to eurozone economies has declined from 0.64 percent and 0.57 percent, respectively, of world trade in 1990 to 0.26 percent and 0.41 percent of world trade in 2011. Interestingly, over the same period, the share of CEMAC's exports to the U.S. and China, as a percentage of world trade, have grown by a factor of two and thirty, respectively.

FIGURE 1: TRENDS IN CEMAC'S EXTERNAL TRADE

AS % SHARE OF WORLD TRADE	VALUE OF EXPORTS		VALUE OF IMPORTS	
	1990	2011	1990	2011
CEMAC Average to China	0.005	0.15	0.008	0.12
CEMAC Average to the US	0.15	0.32	0.04	0.07
CEMAC Average to European Union	0.67	0.27	0.64	0.46
CEMAC Average to Eurozone	0.64	0.26	0.57	0.41
GROWTH IN AGGREGATE VALUE (%)	EXPORTS FROM CEMAC, 1990-2011		IMPORTS INTO CEMAC, 1990-2011	
CEMAC Average to China	12901%		11510%	
CEMAC Average to the US	680%		527%	
CEMAC Average to European Union	258%		245%	
CEMAC Average to Eurozone	250%		261%	

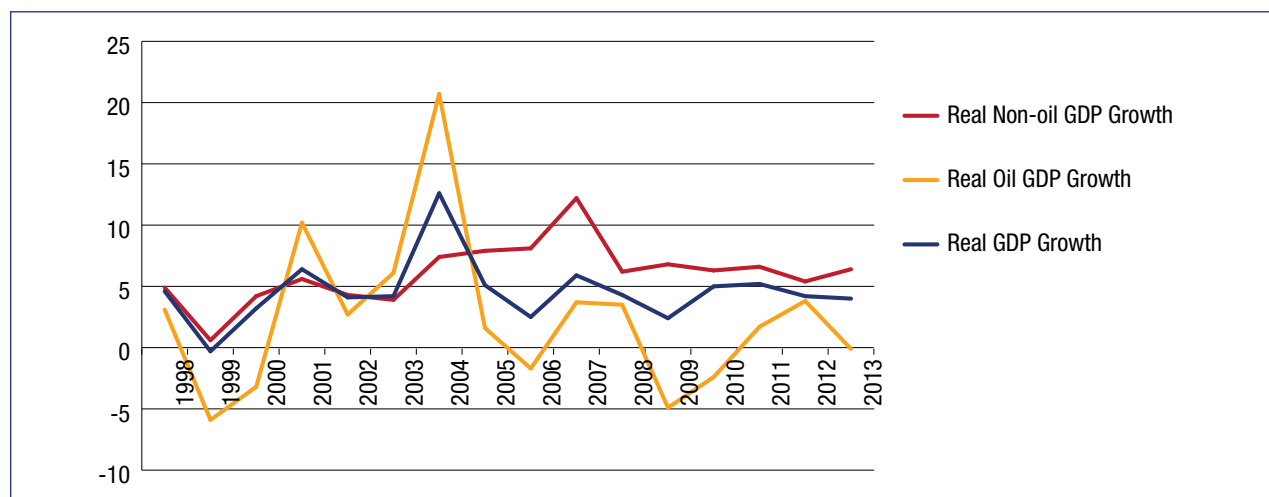
Source: Direction of Trade Statistics (DOTS). Data covers all CEMAC countries with the exception of the Central African Republic.

The graphs presented in Figures 2-7 summarize overall economic activity and macroeconomic performance in CEMAC countries over the past decade. As Figure 2 reveals, the trend in CEMAC's overall GDP growth has been largely consistent with the trend in its real non-oil GDP growth, although there is some similarity in co-movements of real oil GDP growth. It can also be observed that after declining from about 12 percent in 2007,

CEMAC policymakers face two important challenges: one, breaking away from the current stagnating growth performance of non-oil GDP and, two, effectively utilizing oil GDP growth to leverage overall GDP growth.

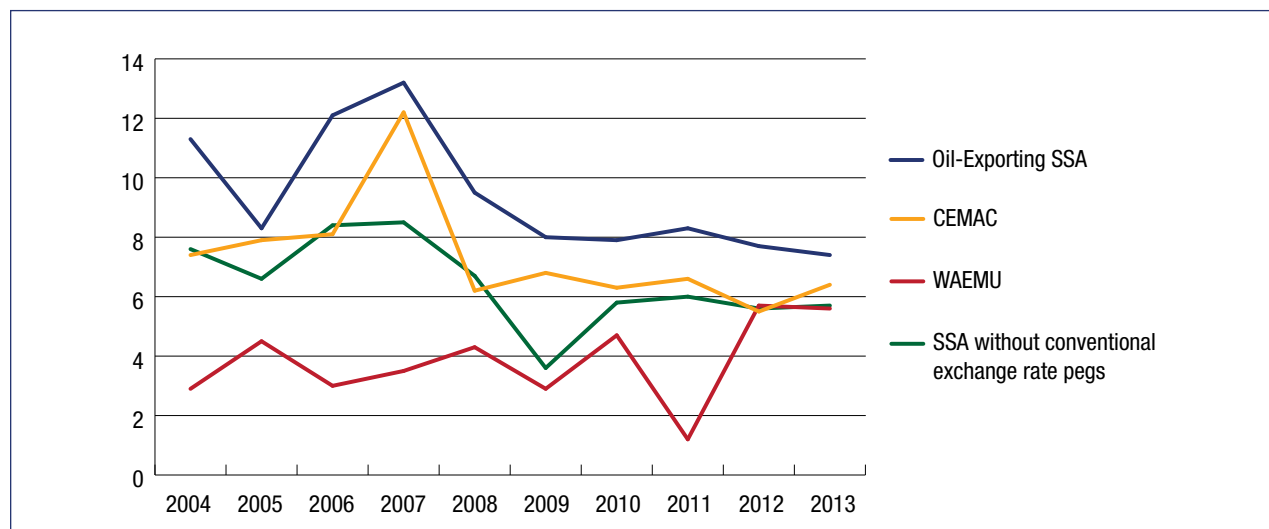
real non-oil GDP growth has since stagnated at about 6 percent annually. It is also equally important to note that CEMAC's non-oil GDP growth performance lags behind that of oil-exporting sub-Saharan Africa (SSA) economies as in Figure 3. At this point, CEMAC policymakers face two important challenges: one, breaking away from the current stagnating growth performance of non-oil GDP and, two, effectively utilizing oil GDP growth to leverage overall GDP growth. Figure 4 suggests that although real per capita GDP growth performance in CEMAC has been relatively superior to that in the WAEMU region during the past decade, CEMAC's performance has lagged behind that of oil-exporting SSA and SSA economies without conventional exchange rate pegs.

FIGURE 2: TRENDS IN CEMAC'S REAL GDP GROWTH PERFORMANCE (%)



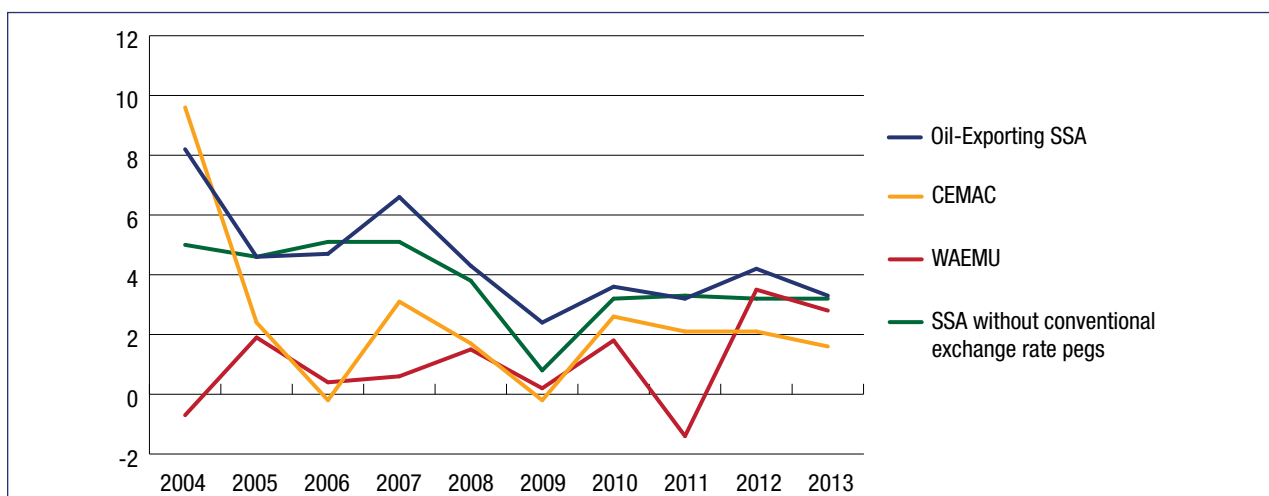
Sources: IMF, World Economic Outlook complimented by BEAC.

FIGURE 3: COMPARATIVE ASSESSMENT OF CEMAC'S REAL NON-OIL GDP GROWTH (%)



Source: IMF, April 2012 Regional Economic Outlook.

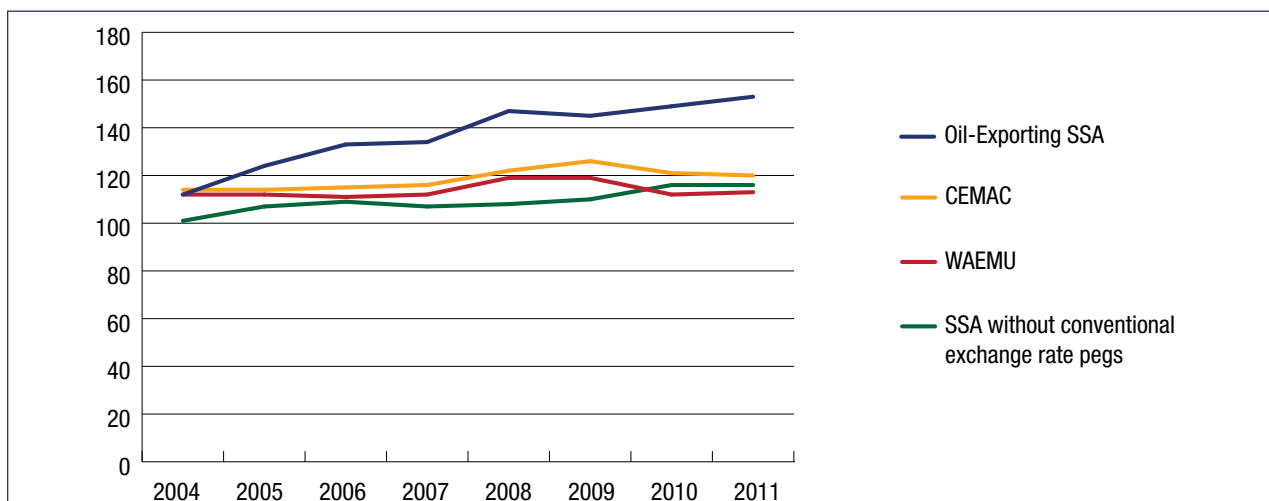
FIGURE 4: COMPARATIVE ASSESSMENT OF CEMAC'S REAL PER CAPITA GDP GROWTH (%)



Source: IMF, April 2012 Regional Economic Outlook.

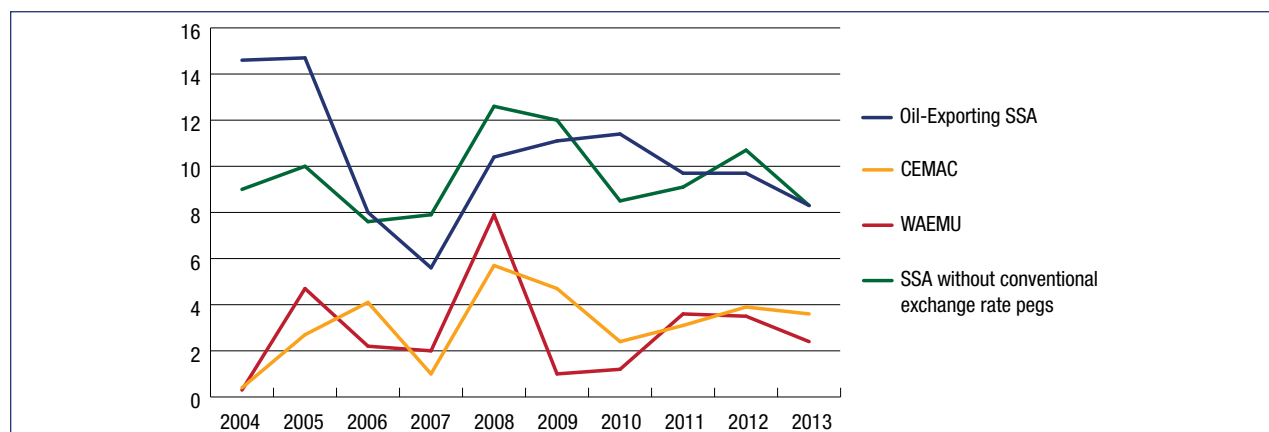
Figure 5 suggest that, although still markedly appreciated, CEMAC's real effective exchange rate has been declining since 2009 and remains far below that of oil-exporting SSA economies. During the preceding decade, average consumer price inflation has been comparatively lower in CEMAC zone than in other oil-exporting SSA countries and SSA countries without conventional exchange rate pegs, as Figure 6 suggests. Also, in comparison with other oil-exporting SSA and SSA countries without conventional exchange rate pegs, CEMAC zone's overall fiscal balance over the past decade has been more impressive, as suggested by Figure 7. Figures 8 and 9 suggest that CEMAC's current account and reserve positions are broadly consistent with external stability, although CEMAC's external position remains far less stable than that of other oil-exporting SSA economies. It is worth emphasizing that the observed positive trends in CEMAC's macroeconomic indicators owe largely to positive developments in the oil market where prices have quadrupled between 1994 and 2006, leading to significant increases in reserves, export and fiscal revenues. At the same time, the negative impact of the 2008-2009 global recession is evident in CEMAC's macroeconomic indicators.

FIGURE 5: COMPARATIVE ASSESSMENT OF CEMAC'S REAL EFFECTIVE EXCHANGE RATE (ANNUAL AVERAGE, INDEX 2000=100)



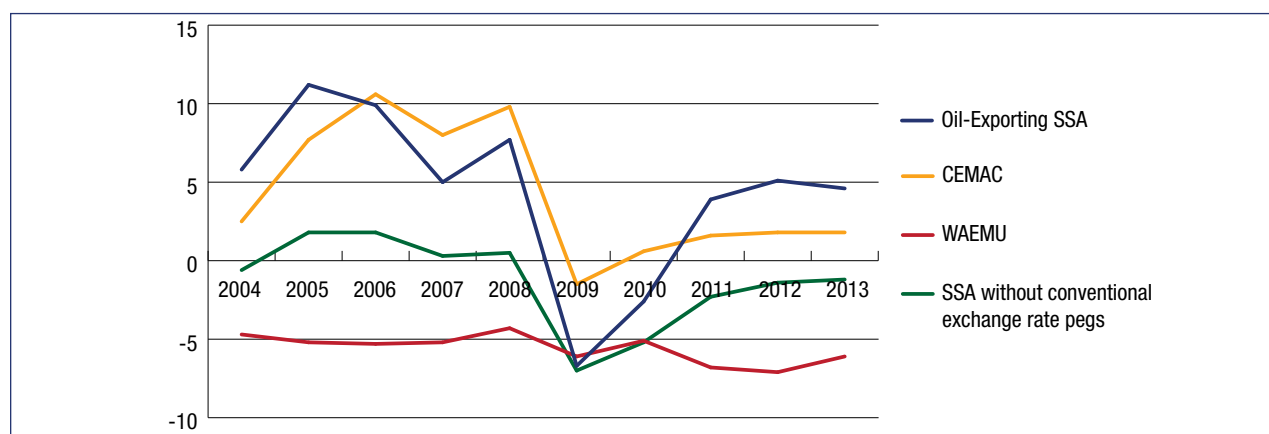
Source: IMF, April 2012 Regional Economic Outlook.

FIGURE 6: COMPARATIVE ASSESSMENT OF CEMAC'S CONSUMER INFLATION (ANNUAL AVERAGE % CHANGE)



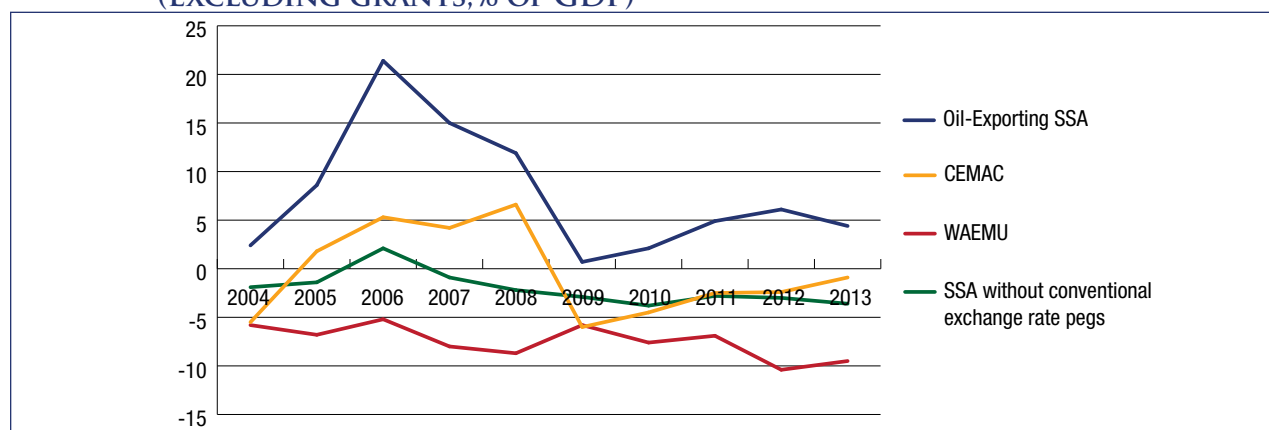
Source: IMF, April 2012 Regional Economic Outlook.

FIGURE 7: COMPARATIVE ASSESSMENT OF CEMAC'S OVERALL FISCAL BALANCE (% OF GDP)



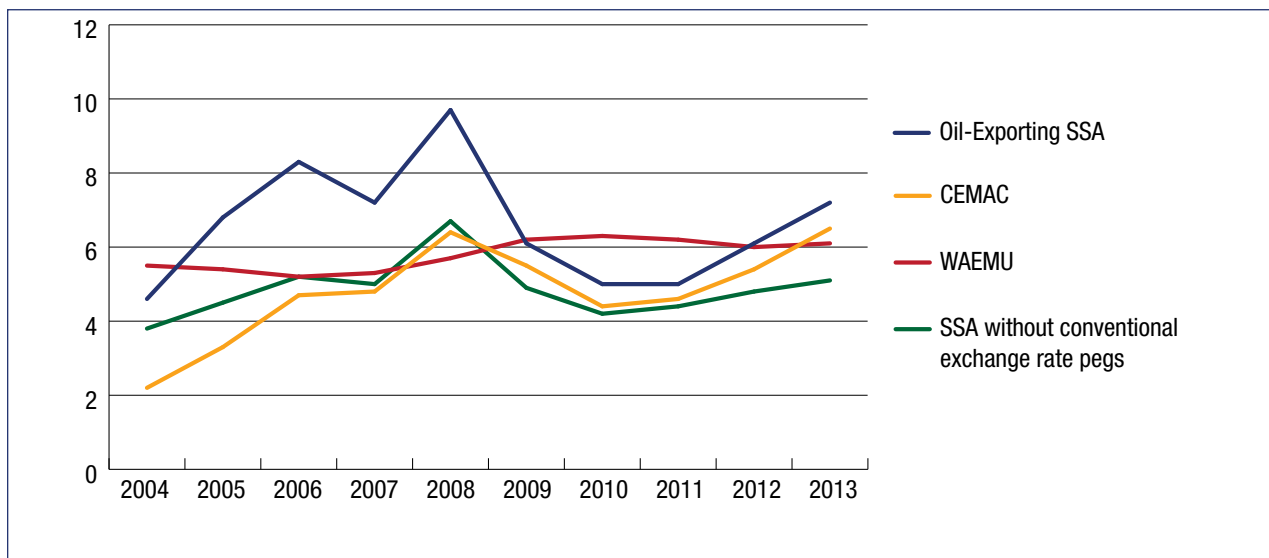
Source: IMF, April 2012 Regional Economic Outlook.

FIGURE 8: COMPARATIVE ASSESSMENT OF CEMAC'S EXTERNAL CURRENT ACCOUNT (EXCLUDING GRANTS, % OF GDP)



Source: IMF, April 2012 Regional Economic Outlook.

**FIGURE 9: COMPARATIVE ASSESSMENT OF CEMAC'S RESERVE COVERAGE
(MONTHS OF IMPORT OF GOODS & SERVICES)**



Source: IMF, April 2012 Regional Economic Outlook.

Obviously, these aggregate data mask significant disparities among CEMAC's individual countries and, in spite of relatively sound macroeconomic indicators, important challenges facing the Central African sub-region as a whole remain.

2. LOOKING AHEAD: A RISK ANALYSIS FOR THE CEMAC CFA FRANC

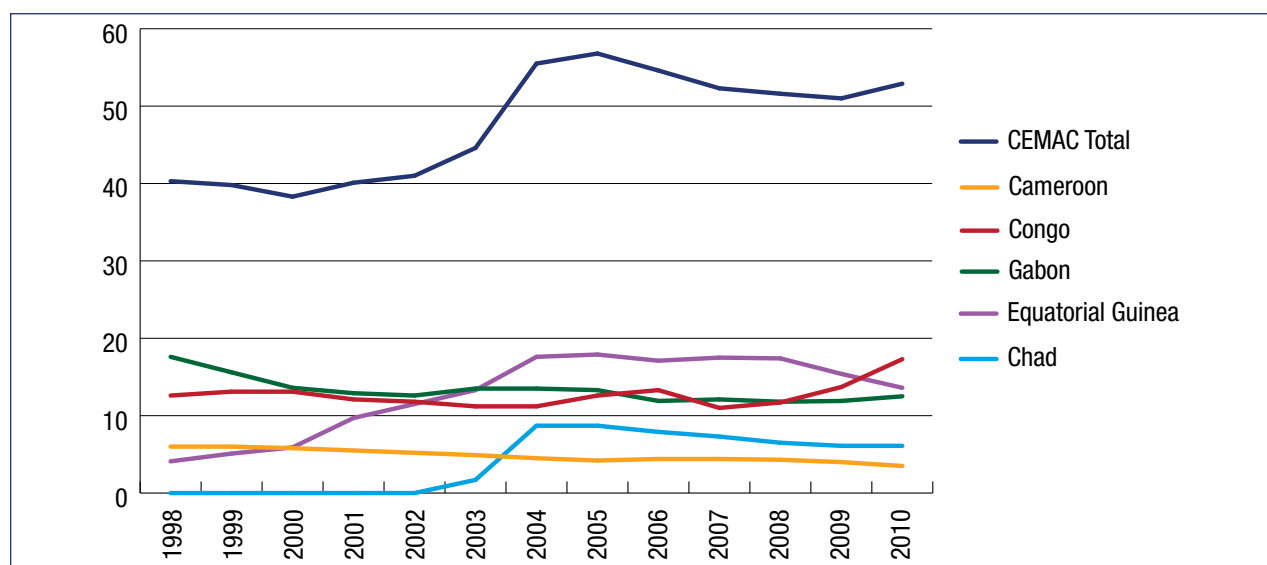
The CEMAC CFA franc monetary regime has both negative and positive consequences for its economies. On the upside, the regime has benefited CEMAC states by promoting macroeconomic stability through lower inflation. In addition, as a result of enhanced credibility of the fixed regime brought about by the French convertibility guarantees, the regime has also lowered black market exchange premium. On the downside, the fixed regime has probably contributed to the lack of competitiveness of CEMAC economies, but the relative importance of this constrain to structural factors remains an empirical issue. Against this backdrop, a number of important challenges currently face monetary policymakers in the CEMAC zone, including:

2.1. Countries that operate a fixed exchange regime make an implicit commitment to exchange unlimited amounts of domestic currency for the reference foreign currency at a fixed rate. Therefore, it is important for

On the upside, the regime has benefited CEMAC states by promoting macroeconomic stability through lower inflation.

such countries to maintain a significant portion of their export earnings in foreign currency, which economists call reserves. In CEMAC, reserve accumulation, which is important to defending the fixed exchange regime, is largely driven by oil exports. Oil accounts for 90 percent of CEMAC's exports and about 40 percent of GDP, implying that reserve accumulation will continue to be largely driven by oil exports (IMF, 2011). Therefore, the depletion of the resource in the somewhat-near future would undermine a significant source of foreign exchange reserves and consequently endanger the ability of the monetary authorities to exchange the local currency for foreign currency. Although CEMAC oil producers have different oil resource endowments and are at different stages of the oil production cycle, oil deposits are expected to be largely depleted for most of CEMAC states in a decade or so⁴ (Gulde & Tsangarides, 2008:114). While tools such as interventions in forwards and derivative markets, monetary tightening, and capital controls could be used in defending a fixed exchange regime when reserves deplete, these options are either cost-ineffective or simply unavailable to CEMAC economies. Figure 10 suggests that, over the past decade, CEMAC zone aggregate oil production has witnessed a long-term increase, driven largely by new oil discoveries in Equatorial Guinea and Chad. For the rest of the countries—notably Cameroon and Gabon, the two leading economies in CEMAC—the trend in oil production has been broadly consistent with the prediction of a saturating petroleum production cycle as observed in stagnating petroleum output over the last decade, despite sustained pressure on oil prices.⁵ Currently, although the IMF (2011) projects that the CEMAC CFA franc fixed exchange regime is adequately secure with a gross international reserve position of about 4.5 months of total imports and 100 percent of broad money, questions about the source of future reserves remain. Thus, unless new oil discoveries and subsequent exploitation take place now, the future of the fixed exchange regime is at stake.

FIGURE 10: TRENDS IN CEMAC'S PETROLEUM PRODUCTION (IN MILLION TONS)



Sources: BEAC courtesy of national governments & IMF.

2.2. Even without resource exhaustion, continued volatility in global financial markets is inducing increased currency fluctuations, which means increased volatility in oil and commodity prices. Increased volatility in commodity prices translates into increased volatility in export revenues for CEMAC countries. Increased export

revenue volatility implies increased volatility in CEMAC foreign reserves, which raises the risks of currency speculation and eventually a currency crisis. Gulde & Tsangarides (2008) estimate that a one standard deviation fall in the price of oil in 2006 leads to a loss in reserves in the CEMAC zone of about two months of import cover. Thus, increased global financial market volatility would require CEMAC countries to maintain increasingly higher reserve coverage. Besides the opportunity cost of holding a higher stock of foreign reserve in terms of lost investment and growth, the fact that a significant source of reserves would continue to come from oil exports is worrisome in the context of depleting oil deposits.

2.3. With the imminent coming into force of the fiscal compact in the eurozone, France is increasingly subjected to limits on its deficits and, thus, cannot be counted upon to continue providing unlimited lines of credit to buffer the CFA franc currency board, even if it wanted to do so. The fact that the French treasury would not be able to continue injecting unlimited amounts of liquidity without further consequences casts doubts on the credibility of the CFA franc fixed regime going forward. Future constraints on French convertibility guarantees implies that CEMAC countries would need to shoulder increasingly higher levels of foreign reserves by themselves. The empirical evidence suggests that, without the French convertibility guarantee, CEMAC's reserves in 2005 would have had to cover 5.8 months of imports instead of 3.8 (Gulde & Tsangarides, 2008:116).

As mentioned above, the main problems with the requirement of increasingly higher future reserve levels are that reserve accumulation continues to be largely supported by oil exports, and oil bases are fast depleting. Higher reserves cover also has an opportunity cost in terms of lost investment and growth. The empirical evidence suggests that during 1999-2004, the total cost of holding reserves amounts, on average, to 0.5 percent and 1.6 percent of annual GDP in CEMAC and WAEMU respectively. Thus, without the French convertibility guarantee, overall CEMAC GDP growth would fall by 0.5 percent annually due to the higher level of required reserves (Gulde & Tsangarides, 2008).

2.4. Another potential source of vulnerability for the CEMAC CFA franc is the increasing evidence of the “Dutch disease” exemplified by the declining terms of trade and export profitability of CEMAC's non-oil exports since 2000, in spite of the fact that overall oil export profitability has been increasing. According to Gulde & Tsangarides (2008), both the export-price wage and the export-price index to tertiary GDP deflator (used in capturing overall export profitability) for CEMAC countries have been improving from 1993 to 2006,⁶ at the same time that non-oil export-price wage and non-oil export-price index have been declining. The analysis suggests another important source of vulnerability for the fixed exchange regime considering that the profitability of the non-oil export sector is central to efforts aimed at diversifying the export resource base. A diversified export resource base helps in mitigating potential adverse effects of falling oil prices and or saturating oil production.⁷

Cognizant of the above-mentioned risks, CEMAC policymakers, through advice from the IMF and World Bank, have been implementing a number of policies to mitigate these risks. Such policies include anchoring fiscal policies of oil-producing countries in sustainable medium-term frameworks in order to take into account the expected depletion of oil revenues. They have also implemented structural policies aimed at spurring economic diversification, improving competitiveness and productivity through the creation of a supportive business environment, and lowering factor costs. In spite of these policy initiatives, the CEMAC fixed exchange regime—

embedded in an under-developed financial market—remains highly vulnerable in the midst of increased capital mobility. Furthermore, it is questionable whether the fixed regime will continue to enhance macroeconomic and financial stability when shocks are of a foreign nominal nature and no longer of a domestic monetary origin.

3. SHOULD THE PRESENT CURRENCY BOARD ARRANGEMENT (CBA) COLLAPSE, WHAT ARE THE ALTERNATIVE EXIT OPTIONS FOR CEMAC COUNTRIES?

Four options, listed below, exist for CEMAC countries should they choose to exit from the current currency board regime.

3.1. Moving to a Simple Peg. Both a simple peg and a currency board are types of fixed exchange regimes, but a currency board is a hard form of a fixed exchange regime. In general, a simple peg holds two advantages over a currency board. First, by imposing only partial reserve coverage of domestic monetary liabilities, a simple peg lowers the opportunity cost of holding reserves, which might translate into higher investment and growth. Second, because the central bank is not strictly limited by foreign reserves in money creation, a simple peg offers room, at least in the short run, for the use of monetary policy tools in smoothing excessive swings in domestic interest rates. Along the same lines, in the event of a systemic banking crisis, a simple peg allows for a limited role of the central bank's lender of last resort function. Thus, from a CEMAC zone perspective, a simple peg would undermine the need for higher reserve coverage in the future while also creating more space for the conduct of monetary policy.

Notwithstanding, the move from a CBA to a simple peg implies a substantial loss in monetary policy credibility. This loss occurs because moving to a simple peg implies abandoning the *formal* link between domestic money creation and reserves. So far, the French convertibility guarantees has achieved two things: enforced credibility in the fixed regime and reduced the need for *full* reserve coverage of domestic monetary liabilities that is mandated in a traditional CBA. Hence, in terms of coverage of domestic monetary liabilities, CEMAC countries may witness little or no change in switching to a simple peg, but will experience substantial loss in policy credibility as the probability of a successful attack on the currency is now higher. Under the current CFA franc arrangement, the abuse of discretion is contained by the 20 percent rule requiring that CEMAC's central bank, the BEAC, extend credit to member states' governments only to a maximum of 20 percent of fiscal revenues of the previous year. Moving to a simple peg would imply loosening this tight constraint on policymakers. Finally, moving to a simple peg implies replacing the foreign nominal anchor of monetary policy with a domestic nominal anchor in the sense that convertibility of the currency which was previously guaranteed by a foreign monetary authority (the French treasury in this case) will now be guaranteed by domestic monetary authorities.

Given the widespread experience of debt monetization by developing countries, especially those in sub-Saharan Africa, a move to a simple peg constitutes a move towards a less credible monetary policy framework.

Though certainly a premature option for CEMAC states to implement today, going forward the CEMAC states may find the option of floating to be increasingly relevant as they further integrate into the world economy and desire greater scope in monetary policymaking.

Given the widespread experience of debt monetization by developing countries, especially those in sub-Saharan Africa, a move to a simple peg constitutes a move towards a less credible monetary policy framework. It's a small wonder why many of the countries in sub-Saharan Africa (mostly former colonial empires of Portugal and England) that abandoned the CBA in favor of a simple peg at the eve of independence ended up worse-off than their peers that remained in the CBA.⁸ To the extent that CEMAC's public domestic financing will continue to be dominated by debt monetization,⁹ one can expect a similar fate for CEMAC economies should they adopt simple pegs as an alternative to the present regime.

3.2. Floating. Many small, open economies despise floating their exchange regimes for two reasons. First, they lack the necessary institutional structures to support a floating regime, notably, a truly independent central bank with an explicit mandate of price stability. Second, they lack the requisite human capital with a full understanding of the monetary transmission mechanism. Indeed, there are many difficult choices to make once one decides to pursue a floating exchange regime, for example, should we float against a single currency or against a basket of currencies? Which nominal anchor for monetary policy should we use: the exchange rate, the money supply (and in turn, which monetary aggregate?), the inflation rate, the price level or nominal GDP? These are all tough questions that require rigorous empirical research to answer.

Though certainly a premature option for CEMAC states to implement today, going forward the CEMAC states may find the option of floating to be increasingly relevant as they further integrate into the world economy and desire greater scope in monetary policymaking. Floating the CFA franc is also appealing to the extent that flexibility to use exchange rate adjustments can be particularly important to CEMAC economies with undiversified export structures and increasing susceptibility to real shocks. Generally, economies with such characteristics need to carefully weigh the decision to give up *active* use of monetary and exchange rate policies implied in pegged regimes. If floating is the preferred option, the question then becomes: Which is more beneficial, floating against a single currency or floating against a basket of international currencies? Depending on the degree of flexibility desired, floating against a basket of international currencies might appear a first-best option.

3.3. Dollarization: The option to dollarize means that CEMAC zone monetary authorities would have to completely give up on the task of monetary and exchange rate policies and simply adopt monetary policy from abroad. The question then becomes which country's monetary policy to adopt? Is it that of the U.S., Japan, eurozone, South Africa or Nigeria? Policymakers should take three important ideas into account when choosing an adopted currency. First, monetary policy in the adopted currency country should be in the hands of independent and conservative central bankers. Second, the monetary policy choices of the foreign central bank should be

consistent with CEMAC states' own domestic monetary options. In other words, there should be a strong correlation between shocks to output in CEMAC states and the foreign economy. Third, CEMAC should choose an economy in which CEMAC is already highly integrated in terms of trade and financial flows.

In spite of the potential benefits of dollarizing their economies, notably in terms of reduced transaction costs and a lower cost of foreign borrowing, experience suggests that dollarization is usually considered only as a last resort by economies in severe economic distress. Issues of pride in own national currency often overrule this option.

3.4. Full Monetary Union: A crucial factor in deciding which monetary regime to pursue is whether a country wants to forgo the *active* use of monetary and exchange rate policies. With dollarization and moving to a monetary union, a country surrenders these two crucial tools of macroeconomic policy. As Schelling (1984) argues, there are strong intellectual grounds to abandon these tools, especially if domestic monetary authorities cannot be trusted to conduct monetary policy in a sensible way. Indeed, the experiences of most developing countries suggest that a multilateral framework for the conduct of monetary policy that further constrains the discretion of national monetary authorities is critical to imposing sound discipline on monetary policy.

There are currently two prospects for a full monetary union as a multilateral framework for the conduct of monetary policy that CEMAC states can pursue. The first involves only CEMAC states and the other involves both CEMAC and WAEMU countries within the broader CFA franc zone. The option of a full monetary union between CEMAC and WAEMU zone countries is problematic in the light of increasing asymmetries in exposure to external shocks, differential speeds of adjustment of the real exchange rate following shocks, important differences in the marginal impacts of economic fundamentals, and the generally low levels of intra-regional trade and financial flows between CEMAC and WAEMU.¹⁰

However, based on their progress in meeting certain criteria stipulated by traditional optimum currency area (OCA) theory, a full monetary union could well be implemented within the CEMAC bloc of countries. Traditional OCA theory suggests that countries desiring to form a monetary union must a priori meet a number of convergence criteria, such as macroeconomic and economic convergence, in addition to having synchronous business cycles (or similarities in production structures). The macroeconomic convergence criteria towards monetary union set by CEMAC member states include: annual inflation rates at below 3 percent, a positive fiscal balance,¹² an annual level of public debt to GDP of less than 70 percent and a non-positive net change in government arrears (both external and internal). Figure 11 suggests that CEMAC states are broadly complying with the macroeconomic convergence criteria—only Equatorial Guinea currently violates more than one of the four convergence criterion.

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FIGURE 11: EVIDENCE OF MACROECONOMIC CONVERGENCE IN CEMAC

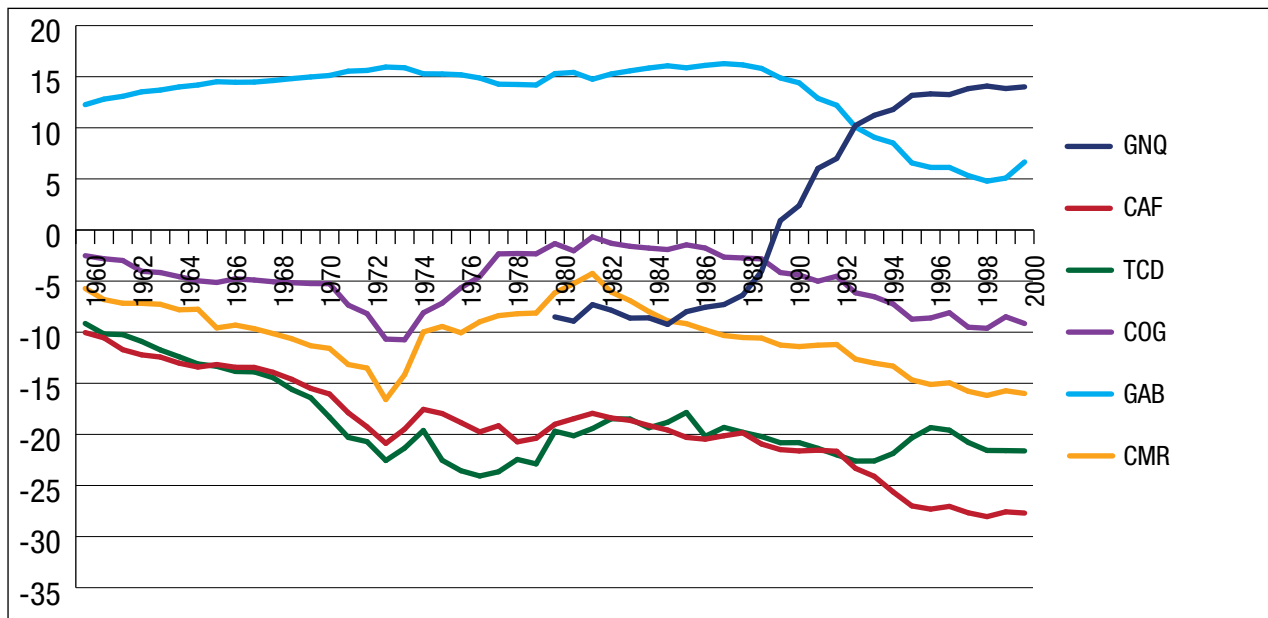
	2007	2008	2009	2010	2011 Est.	2012 Est.
Total Number of Convergence Criteria Violations by CEMAC States	4	8	9	6	5	5
Cameroon	0	1	2	1	0	0
Central African Republic	2	3	2	1	2	1
Chad	0	1	2	1	0	0
Congo, Republic of	1	1	1	1	1	1
Equatorial Guinea	0	1	2	2	2	2
Gabon	1	1	0	0	0	1

Source: IMF, April 2012 Regional Economic Outlook.

The ongoing eurozone crisis has taught us that macroeconomic and economic convergence, taking place both *a priori* and *a posteriori*, are crucial to having a successful monetary union. Economic convergence simply means that productivity levels, and thus competitiveness, in member state economies are converging over time. If economic convergence is not maintained while in a monetary union, some states might experience persistent current account imbalances that would necessitate an exchange rate adjustment to remedy, hence violating the basic rule requiring that the exchange rates amongst member states remain fixed at all times. Two main indicators of economic convergence will be considered here—convergence in speeds of adjustment of member states' real exchange rates following significant misalignment from respective long-run equilibriums and convergence in per capita income levels.

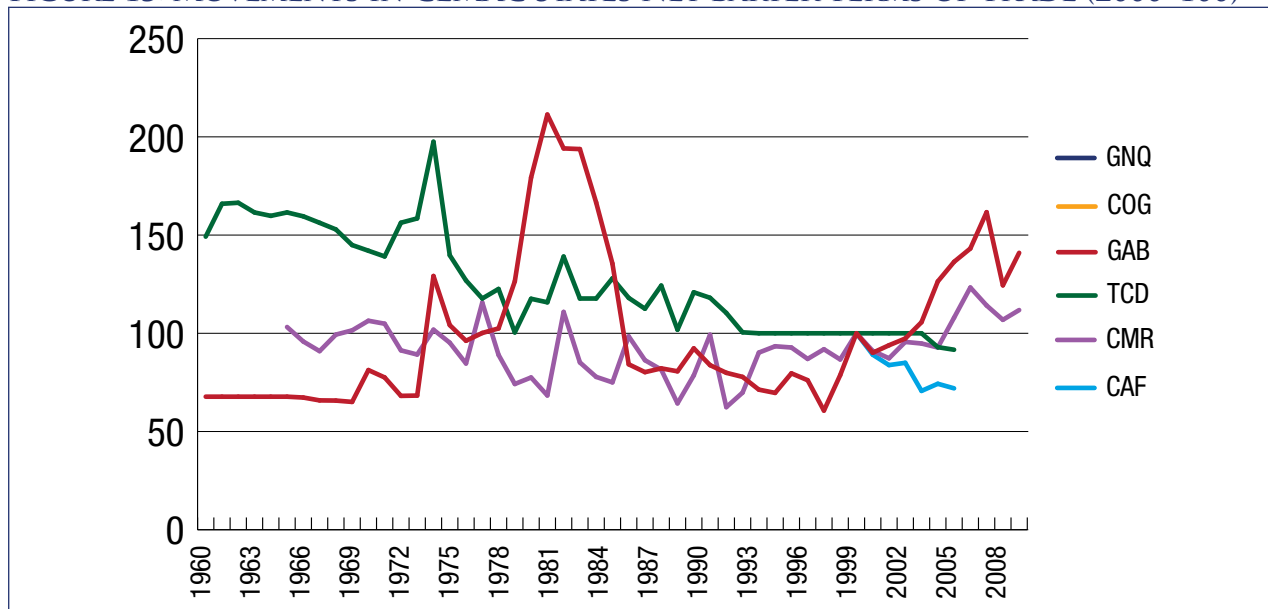
With respect to the speed of adjustment of member states' real exchange rate, significant sluggishness has been reported in CEMAC countries, notably due to the high degree of labor immobility across the region and the absence of fiscal centralization in CEMAC zone.¹³ Though efforts at standardizing and eventually centralizing member states' budgetary spending processes in CEMAC have been remarkably slow, it would be less of a hassle for CEMAC states to form a common pool of foreign reserves, given their successful experience with the operations account. Therefore the observed sluggishness in the adjustment of CEMAC's real exchange rate need not significantly jeopardize the workings of a monetary union in CEMAC as long as member states continue to pursue the reforms currently in place. With respect to convergence in real per capita income levels, Figure 12 presents the trends in percentage differences of CEMAC member states' real per capita GDP levels relative to the overall CEMAC average in an attempt at assessing the extent to which states are catching up or converging in per capita income terms. Allowing for errors of precision in calculating purchasing power parity, gaps in income differentials of less than 5 percent are typically considered insignificant. As Figure 12 shows, with the exception of two countries (Equatorial Guinea and Gabon), the rest of CEMAC economies have been on a path of divergence in per capita income terms. However, these income differentials shouldn't jeopardize progress towards an OCA in CEMAC considering that the magnitude of the income differentials in CEMAC zone are much smaller compared to the income differentials of eurozone peripheral economies before and after 1999 (see Giannone et al, 2009). With respect to the similarities in production structures criteria, so far the Central Africa Republic (CAR) is

FIGURE 12: PERCENT DIFFERENCE IN REAL PER CAPITA INCOME LEVELS RELATIVE TO CEMAC AVERAGE



Source: Author's computations based on World Bank's African Development Indicators data.

FIGURE 13: MOVEMENTS IN CEMAC STATES NET BARTER TERMS OF TRADE (2000=100)



Source: Author's construction from the World Bank's African Development Indicators.

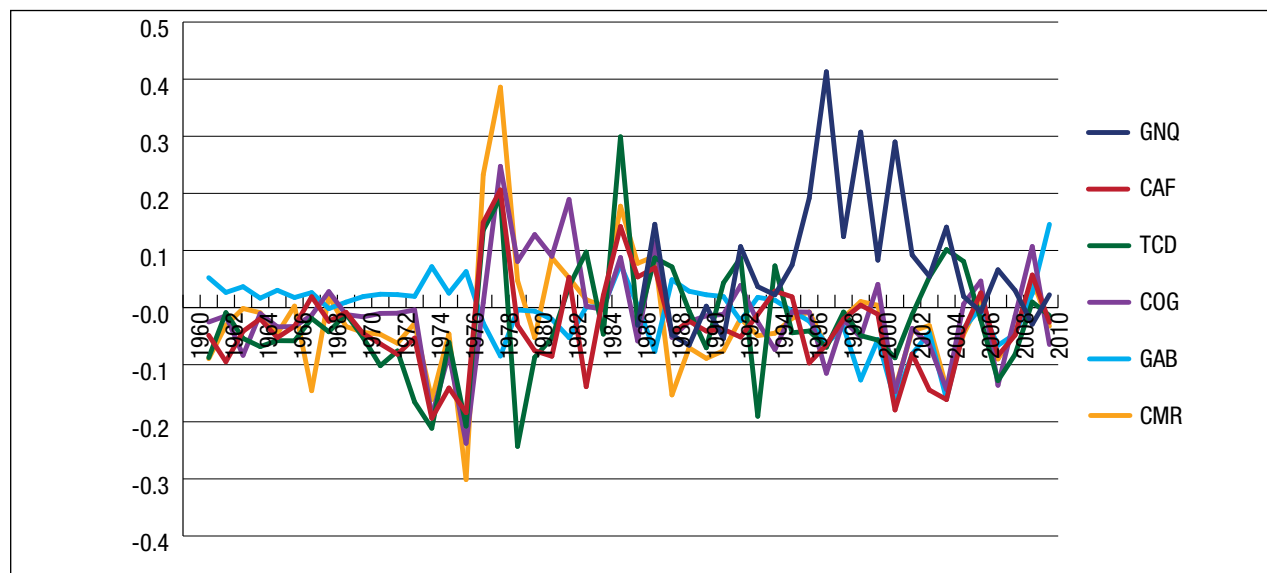
With the exception of the huge variation in Equatorial Guinea's growth relative to the CEMAC average, the evidence in Figure 14 is broadly consistent with an increasingly synchronized business cycles in the CEMAC zone.

the only CEMAC country with a slightly divergent production structure. However, given CAR's rich resource endowment in diamonds, it is unlikely that it does run into a deep recession following oil price spikes that benefit the rest of CEMAC states.¹⁴ To the extent that asymmetric movements in member states' net barter terms of trade¹⁵ (NBTT) are suggestive of differences in countries' exposure to external conditions. Figure 13, revealing a strong correlation in movements of CEMAC members' respective net barter terms of trade over time, suggests that these states have broadly manifested symmetric responses to external shocks.

Figure 14 presents the trends in variation of CEMAC states' real per capita GDP growth relative to the CEMAC growth average in an attempt at assessing the extent of heterogeneity in CEMAC states' business cycles over time. Declining growth variations relative to the CEMAC average would suggest decreasing heterogeneity in member states business cycles, and by implication, a greater chance of success with a common monetary policy. With the exception of the huge variation in Equatorial Guinea's growth relative to the CEMAC average, the evidence in Figure 14 is broadly consistent with an increasingly synchronized business cycles in CEMAC zone.

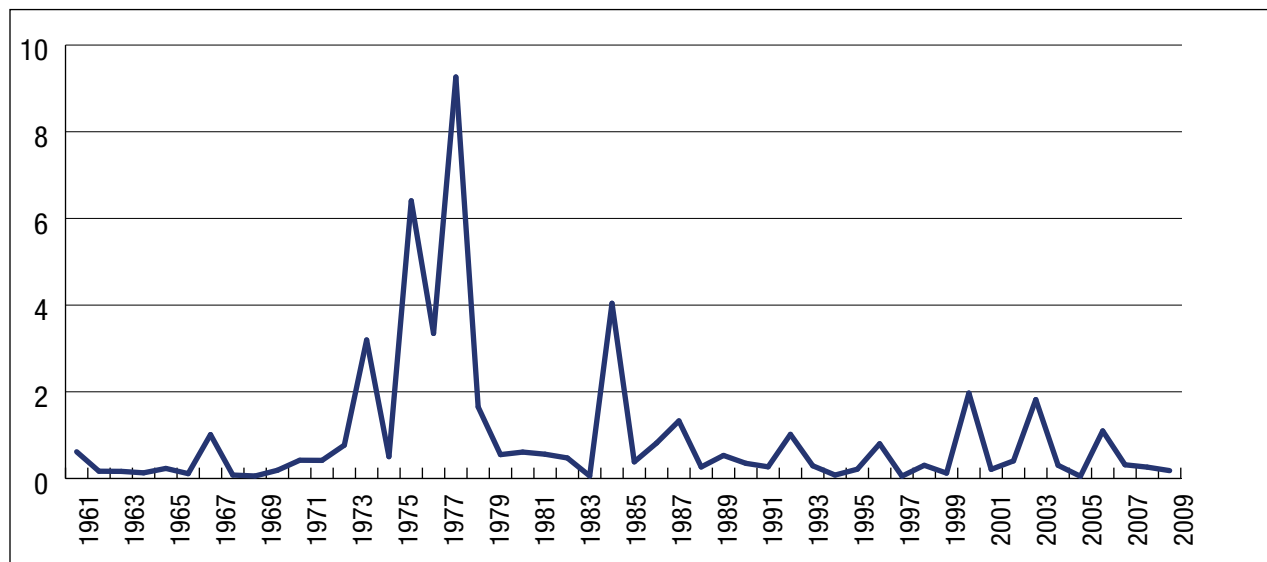
Figure 15 further confirms that the pattern of the overall CEMAC business cycle heterogeneity has been declining over time. The above analysis points to the satisfactory attainment of key macroeconomic convergence criteria by CEMAC states. Yet CEMAC states are lagging behind in terms of meeting economic convergence criteria. Drawing further from the eurozone experience, we learn that meeting economic convergence, both *a priori* and *a posteriori*, is crucial to having a successful monetary union. Given the context of economic divergence in CEMAC and considering that member states of a monetary union are more inclined to free-ride on others, it is crucially important to have, besides a single central bank with regional banking supervisory authority, a regional fiscal body to maintain fiscal discipline and handle fiscal transfers to needy member states. Therefore, if the CEMAC monetary union must avoid the mistakes of the European Monetary Union, fiscal centralization must also be on top of the monetary integration agenda. This analysis suggests that, like in the experience of the eurozone, monetary union in CEMAC would be problematic without fiscal centralization or a political union.

FIGURE 14. DIFFERENCES IN PER CAPITA GDP GROWTH RATES RELATIVE TO CEMAC AVERAGES



Source: Author's computations based on World Bank's African Development Indicators data.

FIGURE 15. CROSS-COUNTRY GROWTH DISPERSION OF CEMAC ZONE ECONOMIES



Source: Author's construction based on World Bank's African Development Indicators data.

4. SUMMARY AND POLICY RECOMMENDATIONS FOR CEMAC COUNTRIES

The analysis has identified oil resource depletion in the somewhat near future as one of the greatest risks to the sustainability of the current CBA linking the CEMAC CFA franc to the euro. Also, the stagnating growth performance in CEMAC's non-oil GDP coupled with continuing volatility in global financial markets poses additional threats to the fixed exchange regime. This means that CEMAC policymakers must begin considering possible exit options from the current CBA.

The analysis in this study suggests the following:

1. A multilateral framework for the conduct of monetary policy remains the ideal option for CEMAC countries, as this framework constrains the discretion of national monetary authorities contributing to price stability. Therefore, and in spite of the fact that CEMAC states do not currently meet economic convergence criteria for forming an optimum currency area, a monetary union remains the first-best exit option from the current monetary arrangement.
2. Given a monetary union framework, two exchange rate regime options open for the CEMAC common currency: either a pegging regime or a managed floating exchange regime. A pegging regime can take one of the three forms: pegging against a single currency such as the euro or dollar, pegging to a basket of currencies (such as the special drawing rights, or to a combination of the euro, renminbi and dollar); or pegging to the export price of oil. Further research beyond the scope of the present brief should unravel the mechanics surrounding each of these options. At this stage of CEMAC states' economic development, given their structural characteristics, and in light of current developments in the eurozone, a dollar peg for the single CEMAC franc would be the most realistic option. Two considerations would justify a dollar peg for the single CEMAC franc going forward. Since the main problem facing the current regime is the anticipated depletion of reserves from oil revenues, there is need for other instruments, besides reserve buffers, for effectively defending the fixed exchange regime. The only instrument for defending a fixed exchange regime without recourse to reserves is intervention in forward and derivatives markets. Yet this option is currently unavailable to CEMAC economies due to the underdeveloped nature of their capital markets. By allowing CEMAC zone countries access to U.S. capital market instruments, a dollar peg would ensure stability of the single CEMAC francs in the event of the depletion of oil resource and foreign reserves. A dollar peg would also be justified on grounds that it ensures stability of income flows from abroad, considering that almost all CEMAC exports are denominated in U.S. dollars and access to U.S. financial instruments through the dollar peg might be instrumental in hedging against dollar-related exchange rate risks. On the contrary, a euro peg that allows access to eurozone but not U.S. financial instruments would be ineffective at enabling investors hedge against exchange rate risks associated with volatility in the dollar. However, the choice of exchange rate regime need not be a permanent decision: Countries generally switch from one regime to another depending on both the desired degree of flexibility in monetary policy and on the level of development of monetary institutions. Thus, as further intra-regional as well as extra-regional trade, services and asset markets integration occurs, requiring greater exchange rate flexibility, and as institutional reforms deepen, CEMAC states can proceed from a dollar peg to a basket peg and eventually to a managed floating regime.

Implementing a full monetary union with a dollar peg of the CEMAC franc necessitates putting in place the institutional mechanisms that would render the Bank of Central African States (BEAC) functional as a truly independent central bank. This move is important because CEMAC's inflation would have to be brought down to and maintained at the extraordinarily low rate as in the U.S. While the framework for joint conduct of monetary policy, including rules for sharing seigniorage revenues and pooling reserves may easily be established following the pattern in the current CBA, CEMAC countries would need to invest in institution building and human capital to develop their capacity to deal with new challenges resulting from greater exposure of their economies to the world economy. In addition, more efforts towards modernizing their financial sector, notably with the introduction of financial instruments that hedge against fluctuations in commodity prices and revenues, would help smooth potential adverse asymmetric shocks to CEMAC economies.

Considering that CEMAC states do not currently possess the institutional structures and the human capital resources necessary to implement a monetary union with a dollar peg, their short-term goal should be to improve the current functioning of the CBA, while progressively putting in place the framework to support the new regime. As such, efforts at anchoring their fiscal policies in sustainable medium-term frameworks must be maintained along with the pursuit of structural policies to improve competitiveness and the business climate in CEMAC states. Further efforts should be geared at increasing real wage flexibility—introducing variable pay elements and possibly changes in bargaining set-ups—and operationalizing the common regional bond market. The experience of East Caribbean countries that also operate a currency board suggests that CEMAC countries can further ameliorate the performance of the CBA by engaging in functional cooperation to provide services, infrastructure and institutional arrangements that facilitate both intra-regional and extra-regional trade. This engagement would lead to the progressive dismantling of the numerous non-tariff barriers to intra-regional trade in CEMAC. Luckily, these initiatives are consistent with the medium-term plan of a monetary union.

ENDNOTES

1. In a *stricto sensu* sense, the use of the term currency board in describing the CFA franc zone is a misnomer given that some of the key characteristics of a currency board, notably, full reserve coverage of base money are not mandated. However, the broader meaning of the term would include the so-called “classic” currency boards which are monetary arrangements linking former colonial empires to the Metropolitan economy. This is the sense in which the term is employed in this paper.
2. The BEAC issues the *Franc de la Coopération Financière Africaine* (CFA) while the BCEAO issues the *Franc de la Communauté Financière de l’Afrique* (CFA). Since January 1, 1999, both CFA francs are fixed to the euro (previously French franc) at the same rate, 655.957 per euro. The Comorian franc used to be pegged at the same rate as the two CFA francs until the January 11, 1994 devaluation which saw different rates of devaluation against the French franc of 50 percent and 33 percent for the CFA francs and Comorian francs respectively (Banque de France, 2010).
3. These convertibility guarantees offered by the French treasury means in principle that CFA franc countries need not hold any reserves to back their currency. Thus, the partial reserve requirement could be thought of as a means of instilling discipline in the monetary authorities.
4. Thanks to new technologies that have expanded production from mature fields, the oil horizon has been extended for some CEMAC states, notably, Gabon. However, in the absence of new discoveries of oil deposits, this development only extends the time horizon of the risk but does not eliminate it.
5. For instance, oil production in Cameroon commenced in 1976 and peaked in 1985 but has been declining since the mid 1990’s.
6. The latest data on these variables could not be obtained by the time of this publication but it is unlikely that the observed trend has reversed significantly.
7. While suitable financial instruments can be effectively used in hedging against fluctuations in oil revenues when oil prices fall, this option is largely unavailable to CEMAC economies as a result of the undeveloped nature of their financial systems.
8. It is claimed that the decision by most former SSA colonial empires to exit the CBA with their colonial masters was motivated by political rather than economic reasons and in the two decades following their exit, these countries generally experienced unusually high black market exchange premiums and weak economic activity. Notable examples were Angola, Mozambique, Guinea-Conakry, Nigeria and Tanzania (Fielding, 2005).
9. The informal sector largely dominates the economies of CEMAC, which constrains government financing sources other than through debt monetization.
10. For a full discussion of the intricacies of having a monetary union between CEMAC and WAEMU countries, see Gulde & Tsangarides (2008).
11. The alternative endogenous OCA theory suggests that the OCA criterion may be satisfied ex-post even if countries do not meet them *a priori*, because a monetary union is itself capable of catalyzing the process of trade integration across countries (Corsetti & Paolo, 2002).
12. Overall budget balance, excluding grants and foreign-financed investment.
13. Gulde & Tsangarides (2008) have found that the speed of adjustment in CEMAC’s real exchange rate is twice as slow than that of WAEMU.

14. Indeed, the pursuit of financial modernization is imperative in CEMAC zone as it would allow the use of financial instruments in hedging against commodity price and revenue fluctuations that may hurt some of their economies.
15. The net barter terms of trade is defined as the percentage ratio of export unit value indexes to the import unit value indexes, measured relative to a base year. It is therefore the export price index divided by the import price index and multiplied by 100.

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