

Central African Economic and Monetary Community: Selected Issues

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CENTRAL AFRICAN ECONOMIC AND MONETARY COMMUNITY (CEMAC)

Selected Issues

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Approved by the African Department

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I. THE EVOLUTION OF ACTUAL AND EQUILIBRIUM REAL EFFECTIVE EXCHANGE RATES IN THE CEMAC REGION¹

A. Introduction and Summary

1. The CFA franc zone has been in existence for over half a century.² The zone comprises 14 African countries grouped into two monetary unions, the WAEMU (Union Économique et Monétaire Ouest Africaine) and CEMAC (Communauté Économique et Monétaire de l'Afrique Centrale). The 1994 devaluation was instrumental in strengthening the competitiveness of the CFA zone, returning the zone's GDP to positive growth rates, and keeping inflation under control.³

2. The recent exchange rate and competitiveness developments have revived the interest in the prospects of and the outlook for the CFA franc. This paper applies the fundamentals equilibrium exchange rate approach based on the Edwards (1989) model and the Johansen (1995) cointegration methodology to analyze the movements of the actual real exchange rate for the CEMAC region vis-à-vis its long-run equilibrium value. Our empirical findings are summarized as follows: first, we show that the proposed fundamentals account for most of the fluctuation of the real effective exchange rates: increases in the terms of trade, government consumption, capital inflows, and productivity improvements tend to cause the exchange rate to appreciate, while increases in investment lead to a depreciation. Second, a comparison of the estimated long-run equilibrium path vis-à-vis the actual level of the exchange rate presents a clear pattern of overvaluation before 1994, an undervaluation from 1994 to about 2001, and a continuing appreciation thereafter. Third, while we estimate that the path of the CEMAC equilibrium real effective exchange rate has brought the real effective exchange rate above its underlying long-run equilibrium value in 2004, this misalignment is not statistically significant; hence, the real effective equilibrium exchange rate is broadly in line with its long-run equilibrium value. Finally, the analysis shows that real exchange rate deviations from its equilibrium level due to temporary factors are expected to revert to equilibrium in absence of further shocks.

3. The rest of the chapter is organized as follows: Section B presents the econometric methodology and the empirical model used for the estimation of the equilibrium real effective exchange rate. Section C discusses the evolution of real effective exchange rates and other relevant economic developments. Next, Section D presents the empirical results including a discussion of the long run and short run behavior, misalignment, and speeds of adjustment. Section E concludes.

¹ Prepared by Charalambos Tsangarides.

² Hadjimichael and Galy (1997) provide a thorough analysis of the CFA zone and its institutions.

³ This was the only change in the peg since the zone's creation. Since the introduction of the euro in 1999, the CFA franc (CFAF) has been pegged to the euro at CFAF 656 per €1.

B. Estimating the Equilibrium Real Effective Exchange Rate

Methodology

4. A number of different approaches exist in the literature for calculating the equilibrium real exchange rate (EREER).⁴ These include traditional uncovered interest parity (UIP) and purchasing power parity (PPP) theories as well as more recent approaches such as the fundamental equilibrium exchange rate (FEER) approach, the underlying internal-external balance approach (UIEB), and the behavioral equilibrium exchange rate (BEER) approach.⁵

5. The FEER approach is a well-recognized approach for calculating equilibrium real exchange rates, particularly appropriate in assessing whether movements of the REER represent misalignments or whether the EREER itself has shifted as a result of changes in the economic fundamentals.⁶ Edwards (1989) dynamic model of a three-good (exportables, importables, and nontradables) small open economy with a fixed exchange rate provides a coherent framework to identify the fundamental variables that are associated with the EREER.⁷ Since only real factors (the fundamentals) can influence the EREER, the model can be used to describe nominal misalignments by separating the factors that can affect the long-run equilibrium real exchange rate with permanent changes, and the short-run misalignments of the nominal exchange rate stemming from policy variables.

The empirical model

6. We use Edwards' (1989) dynamic model of a small, open economy to identify the dynamics between the fundamentals and the REER. The estimation will proceed as follows. First, using the fundamentals specified by the Edwards (1989) model we investigate the existence of a long-run cointegrating relationship between the REER and the fundamentals and, if such a relationship exists, we estimate it using the Johansen (1988, 1995) methodology. (See Appendix I for more details.) Then, we calculate the path of equilibrium real exchange rates using the estimated parameters and non-transitory components of the determining fundamentals.

⁴ Driver and Westaway (2004) provide a complete taxonomy of the different empirical approaches on equilibrium exchange rates estimation used in the literature.

⁵ Pertinent methodological issues are the definition and measurement of the REER, the theoretical and empirical determinants of the EREER, and the actual empirical estimation of the equilibrium REER using a variety of methodologies.

⁶ For example, see Williamson (1994), Faruqee, Isard, and Masson (1999), MacDonald and Stein (1999), and Wren-Lewis (2003).

⁷ The Edwards (1989) model is discussed in detail in Williamson (1994). Mathiesen (2003) is an application of Edwards' model to Malawi.

7. We augment Edwards (1989) theoretical model to include a variable to capture the Balassa-Samuelson effect and two variables to capture the temporary misalignments from inconsistent macroeconomic policies.⁸ The empirical model we estimate is:

$$\ln(\text{REER}) = \alpha_0 + \alpha_1 \ln(\text{TTT}) + \alpha_2 \ln(\text{CGR}) + \alpha_3 \ln(\text{NIR}) + \alpha_4 \ln(\text{PROD}) + \alpha_5 (\text{BFDIR}) + \varepsilon_t$$

where \ln denotes the natural logarithm, ε_t is an error term and

TTT	=	Terms of trade of goods;
CGR	=	Government consumption as a share of GDP;
NIR	=	Investment;
PROD	=	Technological progress index; and
BFDIR	=	Capital flows;

8. The dataset consists of annual observations for the period of 1970–2004, and the model was estimated with dummy variables to capture the structural break of the 1994 devaluation and the presence of outliers. The variables used are plotted in Figure I, Appendix II. The expected signs of the fundamentals are:

- Terms of trade of goods. The expected sign is *positive*. The terms of trade affect the REER through the wealth effect with a positive term of trade shock inducing an increase in the domestic demand, hence an increase in the relative price of non-tradable goods, which results to a REER appreciation.
- Government consumption as a share of GDP.⁹ The expected sign is *ambiguous* in the absence of a breakdown of government spending in tradable and nontradable goods.¹⁰ If government spending is primarily directed towards nontradable (tradable) goods, an increase in government consumption will result to an appreciation (depreciation) of the REER.
- Investment. The expected sign is *negative*. A rise in the investment share of GDP is likely to shift spending towards traded goods (given the high import content of investment) and thus depreciate the REER.
- Technological progress. The expected sign is *positive*. This captures the Balassa-Samuelson effect, in the sense that an increase in the productivity of tradables versus nontradables of one country relative to a foreign country raises its relative wages,

⁸ See MacDonald and Ricci (2002) and Mathisen (2003) for a similar approach.

⁹ This is a proxy for government demand for nontradables.

¹⁰ Hinkle and Montiel (1999) discuss this in detail.

thus increasing the relative price of nontradables to tradables and, hence, causing a REER appreciation.¹¹

- Capital flows.¹² The expected sign is *positive*. An increase in the capital inflows results to an increase in the demand for nontradables and hence an appreciation of REER.

Evolution of real effective exchange rates and other developments

9. Growth in the CEMAC region overall has been strongly linked to external price and exchange rate developments. In the CEMAC region, since the 1994 devaluation real GDP growth averaged 4.1 percent with a 2.9 percent increase in terms of trade. Distinct growth episodes in this period were: (i) the 1996–1999 period where growth was lower, averaging 3.6 percent as a result of unfavorable terms of trade (2.1 percent average decline); (ii) the 2000–04 period where growth picked up averaging 5.5 percent with more favorable oil prices, and a 8.0 percent increase in the terms of trade; and (iii) the 2002–03 period where growth averaged 4.7 percent, dipping below the overall average, in part reflecting declining oil output in more mature producers. With five of six CEMAC members, now net oil-exporters developments and economic prospects continue to be dominated by oil market developments. Real GDP growth strengthened to 8.3 percent in 2004, driven by the oil price increases and new oil production coming on stream in Chad and Equatorial Guinea.

10. The devaluation of the CFA franc in 1994 corrected the overvaluation of the currency and improved the CFA region's external competitiveness. For the CEMAC region, the real effective exchange rate (REER) has appreciated cumulatively by about 33 percent through December 2000, and by a further 18 percent from January 2001 to December 2004, with the latest appreciation essentially due to the strengthening of the euro to which the CFA franc is pegged. By December 2004, the REER was at 88 percent of its pre-devaluation level.

11. The evolution of the REER in the aftermath of the January 1994 devaluation can be divided into three phases (see Table 1 and Figure 1):

- (i) January 1994 to December 1998 where the REER appreciated rapidly as a result of the surge in domestic wages and prices following the devaluation;
- (ii) A short period of depreciation during January 1999 to December 2000 driven by the decline in the terms of trade resulting from declines in key export commodity prices and an increase in oil prices as well as the slowdown in the world economy; and

¹¹ As in other studies, we proxy the Balasa-Samuelson effect using the logarithm of real per capita GDP with respect to trading partner countries.

¹² This is proxied by foreign direct investment.

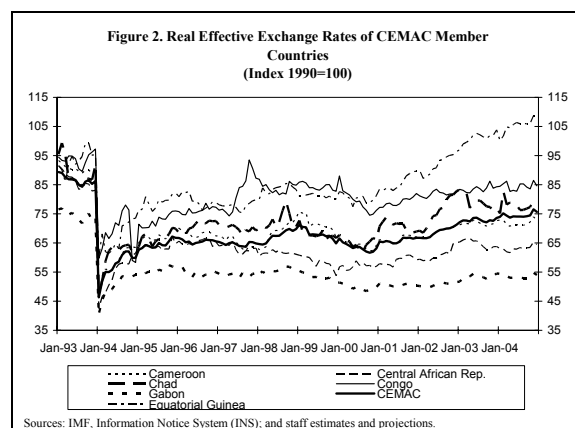
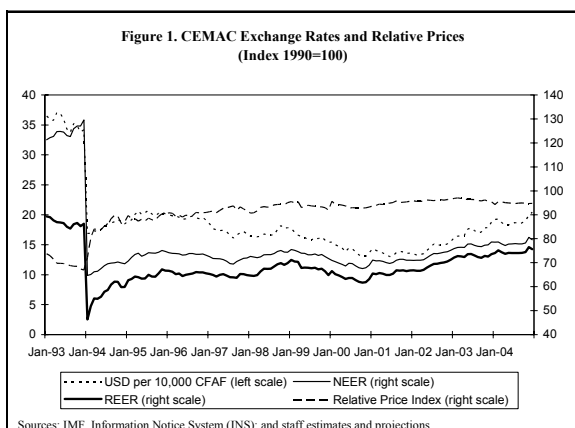
- (iii) January 2001 until present, with the REER appreciating, mainly reflecting the strengthening of the euro against the U.S. dollar.

12. Looking at the member countries of each region, we observe significant variations around the regional average (Figure 2). Equatorial Guinea had the highest appreciation at end-2004 (114 percent of its pre-devaluation level) and Gabon the lowest appreciation (74 percent of its pre-devaluation level).

	Jan 1994- Dec 1998	Jan 1999- Dec 2000	Jan 2001- Dec 2004
Percentage change			
Real effective exchange rate	50.8	-11.3	15.6
Nominal effective exchange rate	15.0	-8.6	12.0
Relative Price Index	31.7	-2.4	1.1
Cumulatively			
Real effective exchange rate	42.6	-9.8	18.4
Nominal effective exchange rate	14.2	-7.4	14.5
Relative Price Index	28.6	-1.8	1.6

Sources: IMF, INS and Fund staff calculations.

13. In addition, we observe a persistent decline in real GDP per capita with respect to trading partners starting in the mid-1970s until the end of the sample period; we also observe an increase of investment starting in the 1990s, and a quite volatile pattern of terms of trade, with an average increase in the 2000s as a result of favorable export commodity prices (oil).



Further, we observe a surge in foreign direct investment in 2000–03 associated with oil-related construction in Chad and Equatorial Guinea; also, the government consumption to GDP ratio has remained roughly a constant until about 1990 and a showed a slight decline since then.¹³

C. Empirical Results

14. The various specification tests of the cointegration analysis show variable stationary after first differencing, the existence of one cointegrating relationship, a parsimonious model with two lags and with good residual diagnostics (see Appendix II). Our cointegration

¹³ Figure II.1 in Appendix II plots these variables of interest.

analysis suggests that there exists a long run relationship between the REERs and their identified fundamentals.

The long-run and short-run relationships

15. The resulting cointegration equation (presented in Table 2) is consistent with the predictions from economic theory, as the estimated coefficients have the expected signs. Table 2 is divided into two panels, with the top panel reporting estimates for the cointegrating vectors (the β 's) together with their t-statistics, and the bottom panel reporting the feedback coefficients estimates (the α 's) and their t-statistics.¹⁴ The estimated coefficients present elasticities in the case of terms of trade, government consumption, investment, and technological progress; and semi-elasticities in the case of capital flows.

16. The **long-run** relationship between the REER and the fundamentals variables is shown in the top panel of Table 2 and can be summarized as follows:

- the terms of trade are positively correlated with the REER indicating a that an improvement in terms of trade would result in an appreciation of the long-run EREER through a possible wealth effect;
- investment is negatively correlated with the REER confirming the hypothesis that

Table 2. Results of Cointegration Estimation	
Normalized Variable: ln(Real Effective Exchange Rate)	
Specification:	Sample
	CEMAC
Estimates of the cointegrating relationships	
Constant	2.71 ** <i>2.44</i>
ln(terms of trade)	2.21 *** <i>7.78</i>
ln(government consumption)	-0.44 <i>-1.62</i>
ln(investment)	-2.71 *** <i>-6.11</i>
ln(technological progress)	1.67 *** <i>8.63</i>
Capital inflows	0.06 ** <i>1.97</i>
Estimates of the short term impact/feedback coefficients	
D[ln(real effective exchange rate)]	0.08 *** <i>3.14</i>
D[ln(terms of trade)]	-0.12 <i>-1.35</i>
D[ln(government consumption)]	0.32 *** <i>4.02</i>
D[ln(investment)]	0.17 *** <i>2.71</i>
D[ln(technological progress)]	-0.02 <i>-0.16</i>
D[Capital inflows]	-1.09 * <i>-1.77</i>
Half-life of deviation	9.07
Notes:	
1. Three asterisks, two asterisks, and one asterisk denote statistical significance at the 0.01, 0.05, and 0.10 levels, respectively; t-statistics in parenthesis.	
2. The speed of adjustment coefficient is derived from the error correction model.	

¹⁴ Three asterisks, two asterisks, and one asterisk denote statistical significance at the 0.01, 0.05, and 0.10 levels, respectively; t-statistics in italics.

investment increases spending towards traded goods;

- the relatively high long-term impact of technological progress (proxied by the relative real GDP per capita) confirms the Ballasa-Samuelson effect;
- there is no evidence that government consumption has a positive (appreciating) impact on the REER (as the coefficient was found to be statistically insignificant) suggesting that perhaps government spending is sometimes directed towards nontradables and sometimes towards tradables, with a net effect of zero impact on the REER; and
- as predicted by theory, capital inflows have a small, yet statistically significant impact on the REER.

17. In order to get an idea of the marginal impact of the fundamentals' coefficients we examine the models' elasticities and investigate the effect of a 1 percent increase in the fundamentals on the REER. Specifically, a 1 percent increase in:

- terms of trade is associated with a 2.21 percent appreciation of the REER;
- the level of government consumption as share to GDP is associated with a 0.44 percent depreciation of the REER (but it is statistically insignificant);
- investment as share to GDP is associated with a 2.71 percent depreciation of the REER;
- technological progress is associated with a 1.67 percent appreciation of the REER; and
- capital inflows is associated with a 0.11 percent appreciation of the REER.

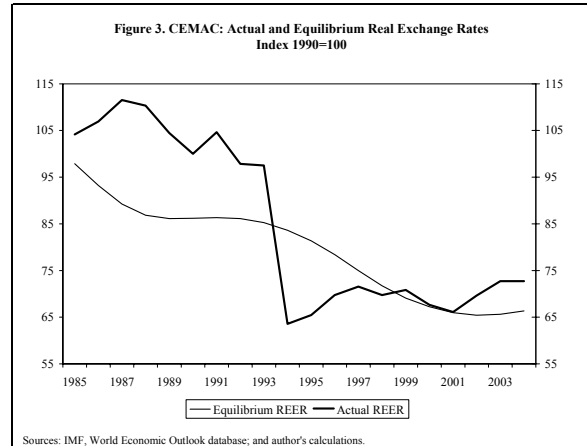
18. The bottom panel of Table 2 shows the feedback coefficients for the cointegrating vector, or the **short-run** relationship of the LREER and its fundamentals. Some are estimated to be insignificantly different from zero. These are: LNCGR, BFDIR, and LNIR. This suggests that these fundamentals are *not* weakly exogenous with respect to the parameters of the cointegrating relationship, and in the face of any deviation from the long-run equilibrium these variables jointly respond and move the system back to equilibrium. Furthermore, the feedback coefficient for the DLREER equation is negative and significantly different from zero, suggesting stability of the error correction mechanism.

Deviations from equilibrium and speed of adjustment

19. The long-run relationship obtained by estimating the equation of the REER with its fundamentals above permits the calculation of the EREER. Therefore, the EREER can be defined as the level of REER that is consistent in the long run with the equilibrium values of

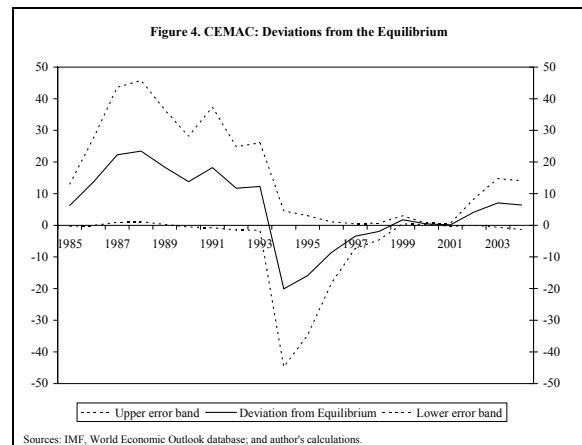
the explanatory variables. Based on the results of the cointegration analysis, the equilibrium EREERs were computed using the long-term components of the fundamentals.¹⁵ Figure 3 displays the evolution of the actual and the estimated EREER rate for the CEMAC region for the period 1985–2004.

20. The actual CEMAC REER went through a period of overvaluation from 1985 up to 1994, with the actual REER well above its equilibrium level, suggesting that the 1994 CFA devaluation was warranted. After the 1994 devaluation, the gap between the actual REER and its equilibrium level continuously narrowed as the REER and EREER moved in opposite directions.



21. It is worth examining the factors that contributed to this. From 1994 to the end of the period, the REER depreciated by about 25 percent. This was a result of an appreciation of 31 percent as a result of increases in terms of trade which was outweighed by the REER depreciation caused by productivity and capital inflows decreases and investment increases in the order of 18, 7, and 30 percent, respectively.

22. By end 2001, the CEMAC REER reached its equilibrium level. The appreciating pattern of the REER continued causing the CEMAC REER to remain above their equilibrium levels for the rest of the period of analysis. Finally, in 2004, our model specifications suggest that the CEMAC REER was above its model estimated long-run equilibrium levels suggesting a possible overvaluation. We examine this potential misalignment in more detail by constructing error bands around the deviations from the equilibrium.¹⁶ Figure 4 plots the exchange rate deviations from its estimated equilibrium value together with the error bands. We conclude



¹⁵ The Hodrick-Prescott filter was used to obtain a smooth estimate of the long-term component of each of the fundamentals series. It should be noted that choosing the degree of smoothing is admittedly arbitrary with larger (smaller) factors generating smoother (less smooth) equilibrium real exchange rate paths. As a robustness check, we construct “multiple” long-term components of the fundamentals using a variety of Hodrick-Prescott smoothing factors (10, 30, 50, 100, and 300) and then derive the equilibrium real exchange rate using a weighted average of these series.

¹⁶ This methodology is applied and discussed in detail in Alberola et al. (1999).

that the misalignment is not statistically significant from zero as the 95 percent error bands around the deviations from equilibrium include zero.

23. The real exchange rate can deviate from its equilibrium value as a result of changes in the fundamentals or due to temporary factors, and as Figure 4 shows, there were several episodes of misalignment of the CEMAC EREER. Depending on the cause of the misalignment, the real exchange rate will converge towards a new equilibrium level or return from its temporary position to the original equilibrium value. The estimates derived in this study suggest that for the CEMAC region, on average, about 0.08 percent of the gap is eliminated every year, which implies that, in the absence of further shocks, about half the gap would be closed within 9 years.

D. Conclusions

24. Using a dynamic model of a small, open economy and the Johansen cointegration methodology, the CEMAC region's equilibrium real effective exchange rates was analyzed and an assessment was made as to whether the movements in the aggregate real exchange rates were consistent with the underlying macroeconomic fundamentals. We show that much of the long-run behavior of the real effective exchange rates can be explained by fluctuations in the terms of trade, government consumption, investment, capital inflows and productivity differences. In addition, we estimate that the recent real appreciation of the CFA exchange rate has brought the CEMAC REER slightly above its underlying long-run equilibrium value. However, since the estimated misalignment is not statistically significant, we conclude that the current level of the CEMAC REER is broadly in line with its long-run equilibrium value. Finally, we identify and estimate a feedback effect, which suggests that following a shock, there is reversion to the time-varying long-run equilibrium.

25. The estimation approach herein is subject to certain limitations, some of which are inherent to the literature that tries to estimate the equilibrium REERs. First, there are issues relating to the theoretical definition and measurement of the actual REER, the uncertainty about the theoretical and empirical determinants of the equilibrium REER, and the empirical estimation of the equilibrium REER. In addition, other potential limitations may be the treatment of the large structural break brought about by the 1994 nominal devaluation; explicitly accounting for rigidities and structural factors that may cause the exchange rate to be misaligned in the first place; and the decomposition into the permanent and transitory component of the fundamentals in order to derive the long term series. As a result, the results of the analysis in this chapter should be interpreted with caution. Absolute statements about magnitudes of any possible misalignments should be avoided, not least due to the fact that, given the degree of model uncertainty, error bands around estimated equilibrium exchange rates may, in some cases, yield inconclusive results.

References

- Alberola, E. S. Cervero, H. Lopez, and A. Unide, 1999, "Global Equilibrium Exchange Rates: Euro, Dollar, 'Ins,' 'Outs,' and Other Major Currencies in a Panel Cointegration Framework," IMF Working Paper 99/175 (Washington: International Monetary Fund).
- Cashin, P., L. Cespedes, and R. Sahay, 2002, "Developing Country Real Exchange Rates: How Many Are Commodity Countries?" IMF Working Paper 02/223 (Washington: International Monetary Fund).
- Clark, P.B., and MacDonald, R., 1999, "Exchange Rates and Economic Fundamentals: A Methodological Comparison of BEERS and FEERS," in *Equilibrium Exchange Rates*, ed. by R. MacDonald and J. L. Stein (Massachusetts: Kluwer Academic Publishers).
- Driver, R. L., and P. F. Westaway, 2004, "Concepts of Equilibrium Exchange Rates," Bank of England Working Paper No. 248.
- Edwards, S., 1989, *Real Exchange Rates, Devaluation and Adjustment: Exchange Rate Policy in Developing Countries* (Cambridge, Massachusetts: MIT Press).
- Faruquee, H., P. Isard, and P. R. Masson, 1999, "A Macroeconomic Balance Framework for Estimating Equilibrium Exchange Rates," in *Equilibrium Exchange Rates*, ed. by R. MacDonald and J. L. Stein (Massachusetts: Kluwer Academic Publishers).
- Hadjimichael, M., and T. Galy, 1997, "The CFA Franc Zone and the EMU," IMF Working Paper 97/156 (Washington: International Monetary Fund).
- Hinkle, L., and Peter J. Montiel, 1999, *Exchange Rate Misalignment: Concepts and Measurement for Developing Countries* (Washington: World Bank).
- Johansen, S., 1988, "Statistical Analysis of Cointegrating Vectors," *Journal of Economic Dynamics and Control*, Vol. 12, pp. 231–254.
- , 1991, "Estimation and Hypothesis Testing of Cointegrating Vectors in Gaussian Vector Autoregressive Models," *Econometrica*, Vol. 59, pp. 1551–80.
- , 1995, *Likelihood-based Inference in Cointegrated Vector Autoregressive Models* (United Kingdom: Oxford University Press).

- Johansen, S., and K. Juselius, 1992, "Testing Structural Hypotheses in a Multivariate Cointegration Analysis of the PPP and the UIP for the UK," *Journal of Econometrics*, Vol. 53, pp. 211–44.
- , 2004, *The Monetary Geography of Africa* (Washington: Brookings Institution Press).
- MacDonald, R., 2000, "Concepts to Calculate Equilibrium Exchange Rates: an Overview," Economic Research Group of the Deutsche Bundesbank, Discussion Paper 3/00.
- MacDonald, R., and L. Ricci, 2003, "Estimation of the Equilibrium Real Exchange Rate for South Africa," IMF Working Paper No, 03/44 (Washington: International Monetary Fund).
- MacDonald, R., and J. L. Stein, 1999, *Equilibrium Exchange Rates* (Massachusetts: Kluwer Academic Publishers).
- Mathisen, J., 2003, "Estimation of the Equilibrium Real Exchange Rate for Malawi," IMF Working Paper No. 03/104 (Washington: International Monetary Fund).
- Stein, J. L., 1994, "The Natural Real Exchange Rate of the U.S. dollar and Determinants of Capital Flows," in *Estimating Equilibrium Exchange Rates*, ed. by J. Williamson (Washington: Institute for International Economics).
- Williamson, J., 1994, "Estimates of FEERs," in *Estimating Equilibrium Exchange Rates*, ed. by J. Williamson, pp. 177–243 (Washington: Institute for International Economics).
- Wren-Lewis, S., 2003, "Estimates of Equilibrium Exchange Rates for Sterling Against the Euro" EMU Study, HM Treasury, UK.

Details on the Econometric Methodology

The Johansen (1988, 1991, and 1995) maximum likelihood procedure is used to test for the existence of a long-run cointegrating relationship. We begin by specifying a vector of variables Y_t assumed to be in vector autoregressive form (VAR):

$$Y_t = \pi_0 + \sum_{i=1}^p \pi_i Y_{t-i} + \Psi D_t + \varepsilon_t \quad (1)$$

Where Y_t is a (6×1) vector:

$$Y_t = \begin{bmatrix} \textit{Real effective exchange rate}_t \\ \textit{Terms of trade of goods}_t \\ \textit{Government consumption}_t \\ \textit{Investment}_t \\ \textit{Technological progress}_t \\ \textit{Capital inflows}_t \end{bmatrix},$$

and π_0 is a (6×1) vector of deterministic variables; π_i 's are (6×6) matrices of coefficients on lags of Y_t ; D_t is a vector of dummy-type variables; p is the lag length; and ε_t is a (6×1) vector of independent and identically distributed errors assumed to be normal with zero mean and covariance matrix Ω . As such, the VAR comprises a system of six equations, where the right-hand side of each equation comprises a common set of lagged and deterministic regressors.

The VAR specification in (1) provides the basis for cointegration analysis. Adding and subtracting various lags of Y_t yields an expression for the VAR in first differences:

$$\Delta Y_t = \pi_0 + \pi Y_{t-1} + \sum_{i=1}^{p-1} \Gamma_i \Delta Y_{t-i} + \Psi D_t + e_t \quad (2)$$

where Δ denotes the difference operator; $\Gamma_i = -(\pi_{i+1} + \dots + \pi_p)$ is a (6×6) coefficient matrix; and $\pi \equiv \left(\sum_{i=1}^p \pi_i \right) - I$.

The VAR model in differences is actually a multivariate form of the ADF unit root test, with the rank of π determining the number of cointegrating vectors:

(i) If $rank(\pi) = 6$ or $rank(\pi) = 0$, then no cointegration exists among the elements in a long-run relationship, and in these cases, it is appropriate to estimate the model in levels (for $rank(\pi) = n$), and first differences (for $rank(\pi) = 0$).

(ii) If $0 < rank(\pi) \equiv r < 6$, then there are r cointegrating vectors/relationships. In this case, matrix π can be expressed as the outer product of two full column rank ($6 \times r$) matrices α and β where $\pi = \alpha\beta'$.

With the specification in (ii) the VAR can be expressed as a vector error correction model (VECM):

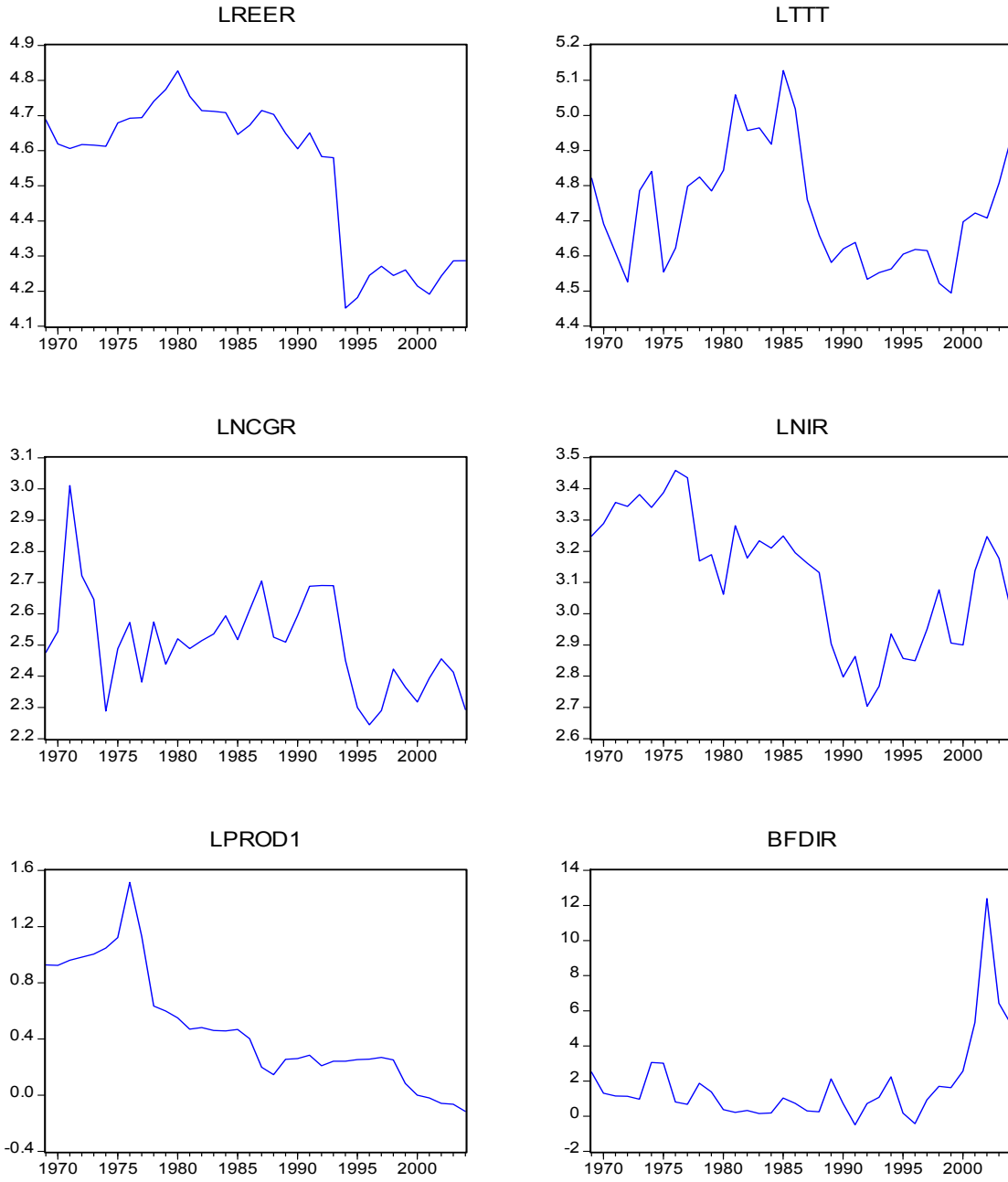
$$\Delta Y_t = \pi_0 + \alpha\beta' Y_{t-1} + \sum_{i=1}^{p-1} \Gamma_i \Delta Y_{t-i} + \Psi D_t + \varepsilon_t \quad (3)$$

The matrix β' contains the cointegrating vector(s) and the matrix α has the weighting elements for the r th cointegrating relation in each equation of the VAR. The matrix rows of $\beta' Y_{t-1}$ are normalized on the variable(s) of interest in the cointegrating relation(s) and interpreted as the deviation(s) from the “long-run” equilibrium condition(s). In this context, the columns of α represent the speed of adjustment to “long-run” equilibrium.¹⁷ The estimated vector β can be used to provide a measure of the equilibrium real exchange rate and also quantify the misalignment gap between the prevailing real exchange rate and its equilibrium level. The estimated α captures the speed at which the real exchange rates converge to the equilibrium level.

¹⁷ If the coefficient is zero in a particular equation, that variable is considered to be weakly exogenous and the VAR can be conditioned on that variable.

I

Figure II.1. CEMAC: Cointegration Variables



**Table II.1. Unit Root Tests
Variables Levels and Differences**

Variable	Lags	ADF	p-value	1% level	5% level	10% level
CEMAC						
<i>ln(REER)</i>	0	-0.86	0.34	-2.63	-1.95	-1.61
<i>Dln(REER)</i>	0	-5.95	0.00	-2.63	-1.95	-1.61
<i>ln(TTT)</i>	0	-2.11	0.24	-3.63	-2.95	-2.61
<i>Dln(TTT)</i>	0	-5.56	0.00	-2.63	-1.95	-1.61
<i>ln(CGR)</i>	0	-0.37	0.55	-2.63	-1.95	-1.61
<i>Dln(CGR)</i>	0	-7.05	0.00	-2.63	-1.95	-1.61
<i>ln(NIR)</i>	0	-0.46	0.51	-2.63	-1.95	-1.61
<i>Dln(NIR)</i>	0	-6.08	0.00	-2.63	-1.95	-1.61
<i>ln(PROD)</i>	0	-1.51	0.12	-2.63	-1.95	-1.61
<i>Dln(PROD)</i>	0	-4.71	0.00	-2.63	-1.95	-1.61
<i>BFDIR</i>	0	-1.68	0.09	-2.63	-1.95	-1.61
<i>DBFDIR</i>	0	-6.50	0.00	-2.63	-1.95	-1.61

Notes:

1. D denotes the difference operator.
2. For p-values less than the 5% significance level, the null hypothesis of a unit root (non-stationarity) is rejected.

Table II.2. Tests for Model Reduction

CEMAC				
Model	Log Likelihood	Schwartz Criterion	Hannan-Quinn Criterion	Akaike Criterion
VAR with 1 lag	171.55	-2.77	-4.94	-6.03
VAR with 2 lags	220.92	-1.95	-5.20	-6.84
VAR with 3 lags	318.17	-4.03	-8.36	-10.56

Model reduction	Statistic	Value	p-value
VAR(3) to VAR(2)	F(36,20)	1.60	0.13
VAR(2) to VAR(3)	F(36,46)	1.27	0.22
VAR(3) to VAR(1)	F(72,27)	1.58	0.09

Notes:

1/ The CEMAC VARs include the variables: LREER, LTTT, LCGR, LNIR, LPROD, BFDIR a constant, and four dummy variables for 1974, 1979, 1994-1995, and 2003; the WAEMU VARs include the variables: LREER, LTTT, LCGR, LNIR, LPROD, BFDIR a constant, and five dummy variables for 1994, 1995, 2001, 2002, and 2003.

2/ The F statistic and p-value report the test of the hypothesis that the model reduction from left to right is valid.

Table II.3. Diagnostic Tests for the Residuals

CEMAC			
Test	Statistic	Value	p-value
Vector AR 1-2 test	F(36,24)	1.05	0.46
LREER	F(1,15)	6.71	0.02
LTTT	F(1,15)	1.26	0.28
LNCGR	F(1,15)	0.97	0.34
LNIR	F(1,15)	0.75	0.40
LPROD	F(1,15)	0.00	0.97
BFDIR	F(1,15)	2.37	0.14
Vector Normality test	Chi ² (12)	18.06	0.11
Vector hetero test	Chi ² (504)	509.58	0.42

Notes:

1/ The CEMAC VARs include the variables: LREER, LTTT, LCGR, LNIR, LPROD, BFDIR a constant, and four dummy variables for 1974, 1979, 1994-1995, and 2003; the WAEMU VARs include the variables: LREER, LTTT, LCGR, LNIR, LPROD, BFDIR a constant, and five dummy variables for 1994, 1995, 2001, 2002, and 2003.

Table II.4. Johansen Cointegration Tests

Cointegration Test - CEMAC				
Number of hypothesized Cointegrating Equations	Eigenvalue	Trace Statistic	5% Critical Value	1% Critical Value
None ***	0.81	126.33	103.85	113.42
At most 1	0.66	70.16	76.97	85.34
At most 2	0.42	33.10	54.08	61.27
At most 3	0.26	14.66	35.19	41.20
At most 4	0.08	4.33	20.26	25.08
At most 5	0.04	1.50	9.16	12.76

The *Trace* test indicates 1 cointegrating eqn(s) at the 0.01 and 0.05 levels.

Number of hypothesized Cointegrating Equations	Eigenvalue	Max-Eigen Statistic	5% Critical Value	1% Critical Value
None ***	0.81	56.17	40.96	46.75
At most 1 **	0.66	37.06	34.81	40.30
At most 2	0.42	18.45	28.59	33.73
At most 3	0.26	10.32	22.30	27.07
At most 4	0.08	2.83	15.89	20.16
At most 5	0.04	1.50	9.16	12.76

The *Max-eigenvalue* test indicates 2 cointegrating eqn(s) at the 0.05 level and 1 at the 0.01 level.

Notes:

1/ The CEMAC VARs include the variables: LREER, LTTT, LCGR, LNIR, LPROD, BFDIR a constant, and four dummy variables for 1974, 1979, 1994-1995, and 2003; The WAEMU VARs include the variables: LREER, LTTT, LCGR, LNIR, LPROD, BFDIR a constant, and five dummy variables for 1994, 1995, 2001, 2002, and 2003.

2/ ** (***) denotes rejection of the hypothesis at the 5% (1%) level.

II. RESERVE ADEQUACY IN A CURRENCY UNION—THE CASE OF THE CEMAC REGION¹⁸

A. Introduction

26. **The CEMAC region’s unique characteristics create interesting challenges for assessing reserve adequacy.** First, the currency union arrangements (including a convertibility guarantee by France and reserve pooling) in the context of a fixed exchange-rate regime impose requirements on reserve holdings. Second, due to its dependency on oil exports, the region is particularly exposed to large current account shocks, which in the case of positive shocks, expose weaknesses in liquidity management and the inadequacy of monetary policy instruments, and, in the case of negative shocks, could undermine the sustainability of the peg. Third, going forward, proposed instruments to save part of the oil revenues in special savings funds would lower the region’s pooled reserves.

27. **In its evaluation of reserve adequacy in the CEMAC region, this paper will follow recent Fund guidance.** Whereas there is no definitive theoretical or empirical guidance as to what constitutes an “adequate” level of reserve holdings, the Board Paper on Liquidity Management emphasizes a multifaceted approach, that considers both qualitative and quantitative factors (institutional characteristics), and that recommends supplementing the use of static indicators by analyzing in a forward-looking manner the potential sources of pressures on reserves (Box 1). Based on this approach, the paper finds that an additional reserves cushion of about two months of imports and over 100 percent of short-term debt would be needed beyond levels suggested by standard reserve adequacy indicators in order to withstand the impact of oil price fluctuations.

28. **The paper is structured as follows:** Section B discusses the determinants of adequate reserve levels in the CEMAC, from the perspective of the institutional arrangements and also considering the main sources of external vulnerability in the region. Section C looks at the evolution of reserves assets since the mid-1990s, and at whether they met both statutory requirements and more standard reserve adequacy benchmarks. The case of the CEMAC is also compared to similar currency unions (the WAEMU and the ECCU). Going forward, future challenges for reserve adequacy are discussed in Section D. These challenges arise both from the large current account volatility and from a progressive liberalization of capital account transactions. In this context, the implications of alternative arrangements to save oil-related inflows on reserve adequacy will also be considered. Section E concludes.

¹⁸ Prepared by Corinne Deléchat.

Box 1. The Fund's Approach to Reserve Adequacy Assessments

The IMF needs an operational measure of reserves that would seem adequate to help countries cope with external shocks. In light of experiences during recent crises newer research conducted in the Fund recommends to augment ratios summarizing the status of the country's sectoral FX exposures and to conduct sensitivity analysis of projected reserve adequacy ratios. In addition, specific country characteristics such as institutional arrangements and practices that relate to public debt management, financial sector supervision and regulation, corporate governance, and financial market development are of key importance for reserve adequacy assessments.

Reserve adequacy assessments need to be based on a clear understanding of the key factors that affect the likelihood and magnitude of pressures on reserves, including the choice of exchange-rate regime, the extent of external imbalances, the degree of openness of the capital account (including the existence and effectiveness of capital controls in containing liquidity pressures) the regulatory regime, the extent to which debt is denominated in local currency, hedged, or offset by private entities' external assets and foreign currency cash flows, and the derivative exposure of the public sector.

For countries with low or no access to international markets, the focus of the analysis should be on the size and volatility of current account flows. The relevant indicator will be the ratio of reserves to months of imports, with a benchmark value of 3 months. However, that benchmark value needs to be evaluated in terms of the past and projected volatility of current account flows. A higher level of reserves is typically sought in countries where shocks to current account flows can be particularly strong, for instance in countries where the export base is narrow and the price of the few key exports is particularly volatile.

For countries with access to capital markets, the ratio of reserves to short-term debt is still the best single indicator, being a good predictor of crises. In addition, the paper suggests augmenting this ratio to include all foreign currency-linked public domestic debt (by residual maturity) and residents' foreign currency deposits in domestic banks net of domestic banks' liquid foreign currency assets to reserves.

The paper also recommends the use of rolling liquidity analyses to complement the static analysis of standard reserve adequacy indicators, institutions, and balance sheets. Such analyses, which consist in projecting reserve coverage ratios under a baseline scenario over the short- to-medium-term and assessing the potential use of reserves under alternative scenarios could complement the projections and stress testing made in the context of the debt sustainability framework, and underpin the discussions of short- to medium-term reserve targets.

B. Institutional Arrangements

29. **An assessment of reserve adequacy in the CEMAC needs to take into account the key features and requirements of the currency union arrangement.** The CFA franc zone arrangements entail a fixed peg vis-à-vis the euro, the pooling of reserve assets and a guarantee of full convertibility by the French Treasury. This guarantee is supported by limits on reserve holdings of both sub-regional central banks, the BEAC and the BCEAO: each is required to keep at least 65 percent of its foreign assets in the operations account with the French Treasury, and to maintain a foreign exchange cover of at least 20 percent of its sight liabilities. Capital movements between each zone and France are free, although in practice a number of administrative restrictions severely limit de facto capital mobility (Box 2). In addition, capital flows between both zones are restricted insofar as both currencies are not convertible against each other.

30. **When the currency cover ratio declines below 20 percent for three consecutive months, emergency measures must be taken by the central bank to protect the parity,** such as increases in the official interest rates and reductions in refinancing ceilings. Similarly, if the balance of the operations account goes into deficit for 30 days, specific measures are triggered, including the reduction by 20 percent of refinancing ceilings for countries in deficit, and by 10 percent for countries whose surplus is less than 15 percent of its money supply. In addition, if the operations account is in debit position in any one CEMAC member country, the BEAC Governor is to consult with the Ministerial Committee as well as the concerned member in order to agree on rapid corrective measures.¹⁹ The BEAC also aims at maintaining the currency cover ratio above 20 percent in each country, although this is not a statutory requirement and has not in practice always been met by individual CEMAC countries.²⁰

31. **Whereas reserve pooling is a key feature of the currency union arrangement, the BEAC continues to attempt to meet the currency cover ratios for individual countries, which implies higher aggregate reserves than is required.** For the purposes of monetary programming, reserves are attributed to each of the member countries, as is money in circulation. Then the monetary program is built up from country-by-country estimates of money and credit demand from the private and public sectors—yielding individual country ceilings for central bank credit to the economy (Masson and Patillo, 2004).

32. **The BEAC's role as a lender of last resort for the region also implies the need to maintain appropriate capitalization in case of banking sector problems.** Although the prudential regulations and surveillance of the sector have improved in recent years,

¹⁹ BEAC statutes, Article 11.

²⁰ The cover ratio was below 20 percent until 1999 for Cameroon, and sporadically in Congo, Equatorial Guinea and Gabon since 1995. In these three countries, the ratio is highly volatile due to large variations in oil-related inflows.

weaknesses remain. The ratio of non-performing loans relative to gross loans increased slightly to 141/2 percent in 2004 while provisioning remained constant. Properly measured, one-third of the 33 banks do not meet the minimal required capital adequacy ratio of 8 percent. In addition, 20 out of 33 banks have violated in 2004 the single large exposure limit, representing an increase of more than 40 percent compared with 2002.

C. Sources of External Vulnerability

33. **The convertibility guarantee should be understood as a last recourse and does not eliminate the need to hold adequate reserves to sustain the peg.** In principle, the convertibility guarantee functions like an insurance mechanism in case of adverse external shocks, rendering reserve holdings in excess of what is required under the currency union arrangement redundant. In practice however, CEMAC country authorities and France have proved extremely reluctant to either changes in the parity or substantial liquidity injections (the parity has been modified only once in 1994 after every other possible remedy had failed). Therefore, in addition to meeting the above statutory requirements, CEMAC's reserves should be sufficient to maintain the credibility of the peg and to provide a liquidity buffer in case of adverse external shocks.

34. **CEMAC countries are particularly vulnerable to large terms of trade shocks and for that reason should hold reserves beyond standard benchmarks.** Five out of the six member countries are oil exporters and oil-price fluctuations and the oil production cycle represent major sources of macroeconomic and reserves volatility.²¹ The large (although declining) public external debt stock of the region also represents a source of vulnerability. Finally, the BEAC's role as a lender of last resort for the region implies the need to maintain adequate capitalization.

35. **At present there are few capital account vulnerabilities, as capital controls prevent large capital outflows and there is no international capital market access.** However, the progressive liberalization of capital account transactions would imply a need for an adequate reserves cushion. In particular, the situation of excess domestic liquidity should be addressed prior to any liberalization, preferably through the introduction of appropriate sterilization instruments. Other balance-sheet vulnerabilities could stem from large foreign currency exposures of the public or private sector.

²¹ The Central African Republic exports diamonds.

Box 2. The CFA Franc Arrangement^{1/}

Together, the CEMAC and WAEMU constitute the CFA franc zone. Whereas there are two formally distinct currencies in both zones (the West African CFA franc in WAEMU, and the Central African CFA franc in CEMAC), the arrangement between both central banks and the French Treasury is almost identical (France is represented on the executive boards of the two regional central banks).²

The CFA franc zone functions according to the following rules: (a) fixed parity against the euro, adjustable if required by economic reasons after consultation with the French government and the unanimous decision of all member countries; (b) convertibility of the CFA franc at the rate of €1 = CFAF655.957; (c) guarantee of full convertibility through the establishment by each central bank of an operations account with the French Treasury with market-related yields of charges; (d) free capital mobility between the two regions and France; and (e) the pooling of foreign exchange reserves in each monetary area.

The statutes of the central banks require that each central bank: (a) maintain at least 65 percent of their foreign assets in the operations account; (b) provide for exchange cover of at least 20 percent of their sight deposits; and (c) impose a cap on accumulated credit extended to each member country of 20 percent of the previous year's public sector revenue.³

Aside from the 1994 50 percent devaluation of the CFA franc, the parity between the CFAF and the French franc/euro has remained unchanged. The move to the EMU third stage and the creation of the euro did not have major implications for the zone, apart from the replacement of the peg to the French franc by the euro and the need to inform the ECOFIN about any change in parity.⁴ As the agreement between the French Treasury and the CFA zone members is of a budgetary nature, it does not oblige the ECB to support the peg (EU council decision of November 23, 1998).

¹ This box draws Hadjimichael and Galy (1997).

² CEMAC members are Cameroon, Chad, the Central African Republic, Equatorial Guinea, and the Republic of Congo. WAEMU members are Benin, Burkina Faso, Cote d'Ivoire, Guinea Bissau, Mali, Niger, Senegal, and Togo.

³ As of X, advances to governments have been replaced by central government bills in the WAEMU.

⁴ See Masson and Patillo (2004).

D. Evolution of Reserve Adequacy Indicators

Reserves and statutory reserve requirements in the CEMAC and WAEMU

36. **Reserve assets in the CEMAC and WAEMU are now at their highest level in a decade.** Since the 1994 devaluation, reserve assets in the CEMAC have followed an increasing trend—albeit somewhat irregular, with a large recent accumulation due to favorable oil prices and increases in oil production. The increase in the WAEMU has been steadier and reflects mostly favorable commodity prices. Statutory reserve indicators have generally remained well above their benchmark values in both the CEMAC and WAEMU regions. One exception is the share of foreign assets in the operations account in the CEMAC, which was below 65 percent in 1998 and 1999, mostly due to low oil prices. In addition, the currency cover ratio in the CEMAC has remained on average almost 40 percent below that of the WAEMU over the last decade (Table 1)

Table 1. CEMAC and WAEMU: Foreign assets of the Central Bank and statutory reserve indicators, 1995-2004
(In billions of CFA francs unless otherwise indicated)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
CEMAC :										
Net foreign assets	95.6	229.6	308.0	84.5	116.1	587.7	485.7	696.7	675.4	1232.9
Foreign assets	235.5	411.5	524.7	310.4	388.7	929.8	851.0	1049.7	991.1	1535.6
<i>of which:</i> Operations account	157.5	288.0	385.5	180.5	251.5	786.8	680.4	870.4	814.1	1305.6
(As a share of foreign assets)	66.9	70.0	73.5	58.2	64.7	84.6	80.0	82.9	82.1	85.0
Currency cover ratio 1/	84.8	83.0	79.6	53.9	56.2	71.1	65.0	68.3	66.3	74.6
WAEMU :										
Net foreign assets	649.3	758.6	955.3	932.1	968.3	1402.2	1983.0	2687.1	2922.6	3028.2
Foreign assets	1387.6	1586.2	1864.7	1919.9	2082.3	2492.9	3011.3	3631.9	3702.5	3701.7
<i>of which:</i> Operations account	1098.5	1369.1	1470.6	1812.6	2216.1	2563.1	3223.9	3348.0	3443.2	3445.3
(As a share of foreign assets)	79.2	86.3	78.9	94.4	106.4	102.8	107.1	92.2	93.0	93.1
Currency cover ratio 1/	91.2	98.0	101.6	97.0	103.1	116.9	115.3	116.7	118.9	116.3

Source: WEO, IMF staff calculations.

1/ Foreign assets as a share of short-term domestic liabilities.

37. **However, the currency cover ratios for individual CEMAC members exhibit wide variations,** with the cover ratios for individual countries in the CEMAC remaining quite low for Cameroon (and below 20 percent until 1999) and for Congo. In addition, the cover ratios for the oil-dependent economies (Congo, Equatorial Guinea and Gabon) are highly volatile due to large variations in oil-related inflows (Table 2).

Table 2. CEMAC Countries: Currency Cover Ratios

	(In percent)									
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Cameroon	8.0	6.8	5.0	4.4	7.2	37.9	38.7	49.5	46.7	52.3
Central African Republic	110.1	107.5	108.0	103.2	100.9	107.2	99.1	99.3	96.6	86.9
Chad	85.2	81.2	81.5	71.8	74.4	87.1	79.8	87.9	73.9	70.3
Congo, Rep. of	31.1	42.4	31.3	6.5	26.4	65.1	35.0	21.6	18.1	31.1
Equatorial Guinea	27.4	16.3	33.3	17.8	24.4	63.4	98.4	101.9	100.2	100.4
Gabon	54.2	67.9	88.5	10.4	16.0	70.8	17.5	38.3	45.3	61.8

Source: WEO, IMF staff calculations.

Traditional indicators of reserve adequacy

38. **For the CEMAC region, the most relevant indicator is the ratio of reserves to prospective imports, as there is no international capital market access.** However, the ratio of reserves to short-term debt on a remaining maturity basis remains important insofar as it captures the size of amortization due on the relatively large external debt, i.e., it captures liquidity (and potentially solvency) risk rather than rollover risk.²² The ratio of reserves to broad money—an indicator of the potential magnitude of capital flight—has empirically been found to be of little relevance. In addition, capital controls in principle limit potentially large capital outflows.²³

39. **Traditional reserve adequacy indicators are now at their highest since 1995.** Compared to 1995, reserves have increased as a share of GDP, broad money, prospective imports and short-term debt (on a remaining maturity basis). The trend has however been irregular, with a low in 1998 followed by a peak in 2000, associated with oil price movements. In addition, reserves are still low in terms of imports, where a 3-months cover is normally recommended, and the reserves-to-short-term debt ratio is adequate in the sense that reserves currently cover the region's scheduled amortization for a year and a half. (Table 3).

Table 3. CEMAC: Reserve Adequacy Indicators, 1995-2004
(In percent, unless otherwise indicated)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Gross Reserves as a Percent of:										
GDP	2.6	4.0	4.7	2.8	3.3	6.6	5.7	6.6	5.9	8.0
M2	17.0	28.5	32.8	19.5	22.3	43.4	37.0	39.9	37.1	52.1
Imports 1/	0.9	1.4	1.4	0.9	1.0	1.9	1.4	1.9	1.6	2.5
Short-term debt 2/	22.1	49.4	47.8	33.5	37.6	92.3	67.4	98.2	103.3	166.6

Source: WEO, IMF staff calculations.

1/ In months of following year's imports of goods and services.

2/ On a remaining maturity basis

40. **As of end-2004, the CEMAC region had lower values for most indicators compared to the WAEMU and the ECCU.** The only exception is the ratio of reserves to broad money, which mainly reflects a lower level of broad money given the region's lower level of financial development. As mentioned above, the reserves to imports ratio is on the low side given the fixed exchange rate commitment and the oil-dependency. Again there are

²² Most of CEMAC's and WAEMU's external debt is official medium-and long-term debt.

²³ In practice, free capital mobility has been constrained by a number of administrative regulations, prudential limits on the net holdings of foreign assets by commercial banks, very high bank commissions for capital transfers abroad and, indirectly, by the discontinuation since August 1993 of the purchases by the two CFA franc zone central banks of their banknotes held outside the zone.

large variations across individual CEMAC countries, with very low reserve indicators in Congo and very high ones in Equatorial Guinea (Table 4).

Table 4. Reserve Adequacy Indicators as of end-2004
(In percent, unless otherwise indicated)

Reserves as a percent of:	GDP	M2	Imports 1/	Short- term debt 2/
Cameroon	5.3	25.9	2.3	89.6
Central African Republic	10.1	58.8	5.8	162.1
Chad	6.1	67.2	2.2	815.6
Congo, Rep. of	0.6	3.2	0.1	7.7
Equatorial Guinea	19.0	215.5	2.8	538.2
Gabon	5.7	30.2	2.0	88.7
CEMAC	8.0	52.1	2.5	166.6
WAEMU	16.3	63.6	6.6	564.8
ECCU	19.2	19.4	2.9	200.0

Source: WEO, IMF staff calculations.

1/ In months of following year's imports of goods and services

2/ On a remaining maturity basis.

E. Future Challenges for Reserve Adequacy

Current account volatility

41. **Going forward, the adequate level of reserves should be determined by taking into account the main sources of pressure on reserves.** For the period 1995–2004, reserves in the CEMAC were six times more volatile than in the WAEMU.²⁴ For the CEMAC countries, the volatility of reserve flows stems from large current and capital account fluctuations linked to the oil price and oil production cycle. In contrast, in the WAEMU region reserves tend to follow capital account developments and are not so volatile.²⁵ Reserve flows in the WAEMU are also less correlated with export price movements—although the recent increase in reserves reflects the favorable evolution of commodity prices (Figure 1).

42. **Medium-term projections indicate that reserve levels should rapidly increase and largely meet the standard reserve adequacy benchmarks.**²⁶ By end-2008, reserves should cover about seven months of imports and over 5 years of amortization (Figure 2). However, as noted earlier, reserve indicators are very sensitive to the underlying oil price assumptions.

43. **To illustrate the sensitivity of reserve indicators to oil price fluctuations, a simple stress test was performed.** Similarly to the stress tests used in the standard debt sustainability analysis (DSA) templates, the oil price was assumed to fall by US\$7 per barrel in 2005, corresponding to its 10-year standard deviation. Assuming further that only export

²⁴ Volatility is calculated as the 10-year standard deviation of the annual percentage changes. For the period, reserves volatility in the CEMAC was 53 percent, compared to 9 percent in the WAEMU.

²⁵ For the last decade, the coefficient of correlation between reserves and the oil price is .94 in the CEMAC, whereas for the WAEMU the correlation between reserves and an index of export prices is -.1.

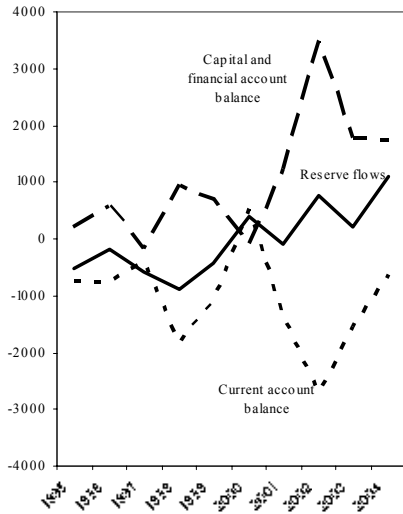
²⁶ Projections are based on March 1, 2005 WEO assumptions, with the 2005 oil price at US\$46.5 per barrel.

revenues would adjust, the corresponding fall in reserves would be of US\$2.33 billion. In that case, the reserves to import ratio would fall by almost two months in 2005, from 3.3 to 1.5 months, and would not reach 3 months until 2007. At the same time, the ratio of reserves to short-term debt ratio would fall by over 100 percent in 2005 (from 229 to 105 percent), going back to the benchmark value of 100 percent (Figure 2).

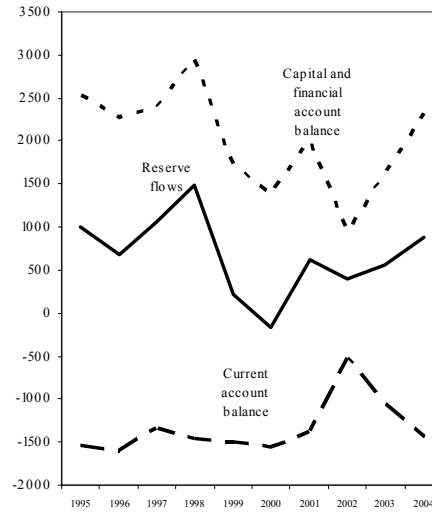
44. **Such sensitivity of reserves to changes in the oil price indicates the need to maintain an additional reserve cushion in excess of the recommended levels.** The above results would point to the need to maintain an additional reserve cover of about two-three months of imports above the three-month benchmark, and a ratio of reserves to short-term debt of about 100–150 percent in excess of the 100 percent benchmark. Therefore, as an indicative target, the BEAC should strive to maintain an import cover of at least five months and a short-term debt cover of about 200–250 percent, in addition to complying with the statutory requirements for reserve holdings. According to the baseline projections, the recommended import cover will not be reached until 2007.

Figure 1. CEMAC and WAEMU: Balance of Payments Flows and Reserve Assets

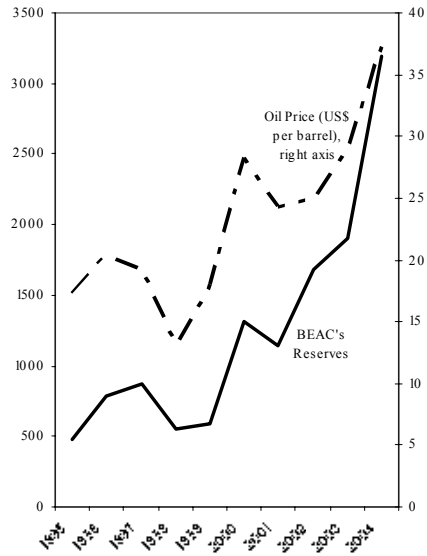
Panel 1. CEMAC: Balance of Payments, 1995-2004
(in millions of U.S. dollars)



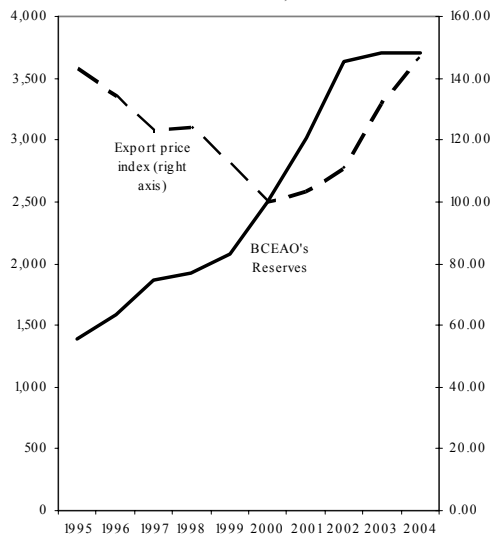
Panel 2. WAEMU: Balance of Payments, 1995-2004
(in millions of U.S. dollars)



Panel 3. CEMAC: Reserve Assets, 1995-2005
(in millions of U.S. dollars)

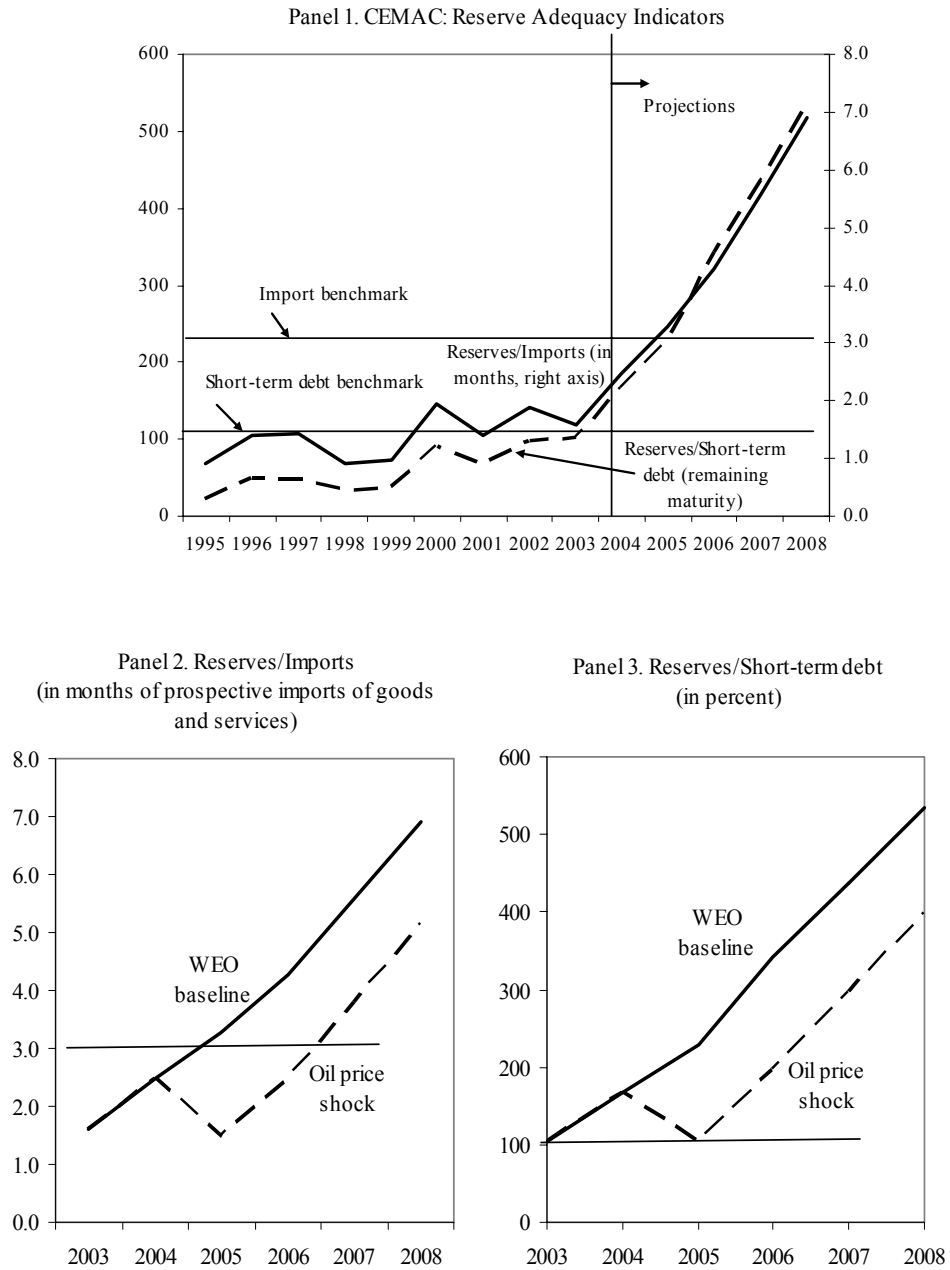


Panel 4. WAEMU: Reserve Assets, 1995-2005
(in millions of U.S. dollars unless otherwise indicated)



Source: WEO and IMF staff calculations.

Figure 2. Projected Reserve Adequacy Indicators



Source: WEO and IMF staff calculations.

Costs of holding reserves for the CEMAC

45. **Because holding reserves is costly, accumulation of reserves significantly in excess of the recommended level would not be advisable.** There is an opportunity cost of holding reserves in terms of foregone alternative investment opportunities, and increased exposure of the central bank's balance sheet to currency risk. In addition, past a certain level it is empirically not clear that a further build up helps reduce vulnerability, and rapid reserve accumulation may suggest an exchange rate misalignment and may lead to excess domestic liquidity expansion. Finally, the costs of sterilization and their impact on central bank profitability also have to be taken into account.

46. **The opportunity cost can be approximated by the difference between the rate of return on reserves and the interest payments on government or central bank borrowing.**²⁷ As central bank or government bonds have yet to be introduced in the CEMAC region, the closest approximation would be the rate charged by the BEAC on advances to governments. The rate of return on reserves has two components—the rate of return on reserves in the operations account and the rate of return on reserves managed by the BEAC itself. As of end-2004, 85 percent of BEAC's reserves were held in the operations account. The reserves on this account receive the European Marginal Lending Facility Rate (EMLFR).²⁸ The remaining 15 percent managed by the BEAC is invested in BIS, FED and OECD government papers.²⁹ As there is no separate information on the returns on those assets, it is assumed here that the totality of reserves is remunerated at the EMLFR.

47. **By that measure, the opportunity cost of holding reserves for the BEAC is relatively small.** The opportunity cost represents only about 0.2 percent of the region's GDP (Table 5). The sterilization cost, as measured by the difference between the average return on reserves and the cost to full sterilization, is even smaller. The interest rate used to calculate the sterilization cost is the rate on liquidity withdrawals ("taux des appels d'offres négatifs"), whereby the central bank can

Table 5. CEMAC: Opportunity Cost of Holding Reserves
(in millions of U.S. dollars unless otherwise indicated)

	1999	2000	2001	2002	2003	2004
Average Reserves	573.6	957.1	1,231.1	1,410.8	1,793.3	2,548.5
EMLFR (in percent)	4.0	5.8	4.3	3.8	3.0	3.0
Rate on Treasury Advances (%)	7.3	7.1	6.9	6.4	6.3	6.0
Rate on liquidity withdrawals (%) 1/	3.0	3.4	3.7	3.2	2.2	2.0
Opportunity Cost 2/	18.9	13.2	32.3	37.2	59.2	76.5
As a percent of GDP	0.10	0.07	0.16	0.16	0.20	0.21
Opportunity Cost 3/	5.83	22.16	7.23	8.29	14.74	25.17
As a percent of GDP	0.03	0.11	0.04	0.04	0.05	0.07

Sources: BEAC, WEO and IMF staff calculations.

1/ Sterilization cost, measured as rate on liquidity placements at 28 days.

2/ Difference between the return on reserves and the rate on Treasury advances.

3/ Difference between the return on reserves and the cost of sterilization-liquidity withdrawals ("appels d'offre négatifs").

²⁷ See Hviding and Ricci, Espinosa-Vega and Vera Martin (2004).

²⁸ From 1999 onwards.

²⁹ With technical assistance from the Fund, a trading room was recently established and investment policy is progressively becoming less conservative.

hold part of commercial banks' excess liquidity. However, these operations are not very successful at mopping up excess liquidity (even in the presence of capital controls)—possibly due to the low rate of return offered to banks—pointing to the necessity of introducing alternative monetary policy instruments such as central bank bills.

Balance sheet vulnerabilities

48. **Aside from official external debt, foreign currency exposures in the CEMAC are moderate.** In addition, external debt has been steadily declining over the last decade, due to regional GDP growth and debt reduction in some countries in the context of the enhanced HIPC Initiative.³⁰ Based on current WEO assumptions, the reserves to short-term debt ratio are therefore projected to reach 170 percent by end-2005. Due to the lack of market access, non-financial private sector's foreign currency exposures are small, although the lack of information on private external debt prevents an accurate diagnostic. As banks are not allowed to hold FX deposits or to make FX loans, the foreign currency exposure of the financial sector is not very significant. It is not possible to assess the region's overall FX exposure as CEMAC members do not yet report data on their net international investment position (Table 6).

Table 6. CEMAC and WAEMU: Foreign currency exposures
(In millions of U.S. dollars unless otherwise indicated)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
CEMAC										
Net foreign assets of the Central Bank	195.2	438.5	514.4	150.4	177.7	833.7	652.5	1,113.8	1,300.4	2,560.1
Net foreign assets of commercial banks	41.6	38.9	34.1	36.3	31.2	28.9	27.4	32.6	39.3	42.3
Total external debt	19,482.7	19,709.6	18,930.2	18,823.6	19,549.7	17,725.7	17,577.6	17,141.5	19,341.0	16,394.6
of short-term debt 1/	2,177.2	1,590.5	1,832.8	1,647.0	1,581.1	1,429.4	1,696.8	1,708.4	1,847.9	1,913.5
Memorandum items (in percent of GDP):										
Total public external debt	107.8	98.3	99.1	101.7	102.2	89.0	86.5	75.3	66.8	44.9
WAEMU										
Net foreign assets of the Central Bank	1,325.0	1,448.6	1,595.4	1,658.0	1,482.9	1,989.0	2,664.2	4,295.9	5,627.2	6,288.1
Net foreign assets of commercial banks	172.5	161.4	141.1	150.3	129.4	119.9	113.5	135.1	162.7	175.5
Total external debt	28,937.7	29,335.5	27,101.6	24,480.7	24,197.2	24,166.1	23,976.0	25,272.0	26,027.2	26,590.0
of short-term debt 1/	5,022.6	4,682.8	5,040.3	1,725.2	1,590.0	925.8	1,334.6	1,335.4	1,534.4	1,360.8
Memorandum items (in percent of GDP):										
Total public external debt	108.0	101.8	98.3	82.1	81.9	93.1	88.8	84.8	69.5	61.6

Source: WEO, IMF staff calculations.

1/ On a remaining maturity basis.

³⁰ Cameroon, Chad, the Central African Republic and Congo are HIPC-eligible, and Cameroon and Chad have already benefited from interim debt relief in the context of the initiative.

Managing oil-related inflows

49. **The repatriation requirement for FX proceeds, combined with the pooling of reserves at the BEAC, implies that most of the region's oil inflows add to BEAC's reserves.** As a counterpart, CEMAC governments build up CFA deposits at the BEAC. However, remuneration on these deposits is currently low. Such remuneration is linked to the amount of outstanding advances provided by BEAC (each year member states can draw up to 20 percent of the preceding year's revenue). Only the portion of deposits in excess of these advances can be remunerated at the rate of 1.7 percent,³¹ and in practice only Equatorial Guinea and Gabon have such an excedent. In view of the likely further increase in their deposits related to oil inflows, some member countries are concerned about this lack of remuneration in view of the need to preserve the value of their oil wealth.

50. **The BEAC intends to address these concerns by providing an operational framework establishing remunerated Funds for Future Generations (FFGs) and Stabilization Funds (SFs).** In 1998, the CEMAC Ministers agreed on the necessity to generate savings out of oil revenues and to establish FFGs. Chad, Equatorial Guinea, and Gabon established such funds, outside of the BEAC for Chad and Equatorial Guinea, and in the form of an account at the BEAC but with minimal contributions in the case of Gabon. Concerned about the need to maintain the principle of reserve pooling, in 1999 CEMAC Ministers agreed on further implementing rules for the funds for future generations and on the creation of Oil Revenue Stabilization Funds.³² According to these rules, which were formally adopted by BEAC's Administrative Board on July 12, 2001, the funds would be established at the BEAC and would be remunerated.

51. **The impact of these schemes on reserve adequacy and BEAC's profitability is yet unclear.** Regarding SFs, the FX resources would continue to be channeled through the operations account, and should thus have no impact on reserves. The net remuneration offered by BEAC on the CFA counterpart (2 percent) would represent an additional cost to the BEAC. The total impact would depend on the size of the contributions to SFs by CEMAC members (mostly Chad, Equatorial Guinea, and Gabon). FFGs, however, should not be considered part of monetary reserves as they have a long-term orientation and the assets they invest in would not be recommended as best practice for the investment of monetary reserves. In addition, the FX assets should be the property of the member states, and for that reason as well would not be considered part of the pooled reserves.

52. **In the case of Chad, the BEAC has already agreed on a set of conventions establishing a stabilization fund and a fund for future generations (see Box 3).** A simple estimation of the possible impact on BEAC's reserves of the establishment of FFGs in all

³¹ As of January 20, 2005.

³² CEMAC Ministerial Committee, *Note d'Orientation sur la Mise en Oeuvre des Fonds de Réserve pour les Générations Futures et du Mécanisme de Stabilisation des Recettes Budgétaires* September 20, 1999.

CEMAC oil exporters on the same terms as Chad has been conducted. The estimation assumes for simplicity that savings start in 2004.³³ The Chadian decree specifies that 10 percent of all royalties and dividends received by the state would be allocated to the FFG. This is similar to the conditions set in the Gabonese law establishing a FFG, passed in July 1998.³⁴ Assuming that all CEMAC oil exporters would implement a savings scheme on the same terms, the projected impact on reserves and reserve adequacy indicators would be rather small (Table 7).³⁵

53. **However, the optimal savings profile for, and size of, an FFG will differ across countries.** They depend, inter alia, on each country's set of intergenerational preferences, its phase in the oil production cycle, the projected size of oil reserves, its absorptive capacity and initial level of external indebtedness (Davis et al., 2001, Gereirat, 2005, Katz, et al., 2004). These variables are different for each CEMAC oil producer, and a simple, homogeneous savings rule is unlikely to yield an optimal result. In particular, there are important benefits to saving more early in the production cycle, when revenues are high. Whereas a discussion on the optimal size of FFGs for CEMAC countries is beyond the scope of this paper, allowing more flexibility in the savings profile will be beneficial. Looking at the baseline profile of reserve accumulation and projected oil revenue, larger savings could be accommodated—provided reserves remain at an adequate level (Table 7).

³³ The convention on the establishment of a fund for future generations has not yet been finalized but the main modalities are not expected to change much—the outstanding issue was the rate of remuneration paid to Chad and the management fee of the BEAC.

³⁴ The Gabonese law established an FFG with a minimum capital of CFAF 500 billion. Until the minimum capital is reached, 10 percent of projected baseline oil revenues are saved in the fund, and 50 percent of oil revenues exceeding the baseline projection contained in the budget (half of the oil windfall). Once the minimum capital is reached all of the oil windfall would be placed in the fund. As of end-2004, the outstanding FFG balance was of CFAF 55 billion (Gereirat, 2005).

³⁵ These assumptions are however likely to overestimate the actual impact, as total revenue might also include indirect oil revenue (income tax and profit tax) depending on individual countries' definitions. In addition, it is not clear at this point whether all CEMAC oil exporters would agree to participate in such a scheme.

Table 7. CEMAC: Impact of Funds for Future Generations on Reserves
(in millions of U.S. dollars unless otherwise indicated)

Current projections:	2003	2004	2005	2006	2007	2008
Reserves	1,908.3	3,188.7	4,284.9	5,519.7	7,254.9	9,116.9
Reserves/Imports 1/	1.6	2.5	3.3	4.3	5.6	6.9
Reserves/Short-term debt 2/	103.3	166.6	229.1	342.2	435.9	533.8
With Fund for future generations=10 percent of projected CEMAC oil revenues						
Size of Fund for future generations	0.0	211.4	502.3	799.7	1,100.5	1,394.7
Reserves	1,908.3	2,788.5	3,697.1	4,919.0	6,647.0	8,522.6
Reserves/Imports 1/	1.6	2.5	2.8	3.8	5.1	6.5
Reserves/Short-term debt 2/	103.3	166.6	197.7	305.0	399.3	499.0
With Fund for future generations=30 percent of projected CEMAC oil revenues						
Size of Fund for future generations	0.0	634.1	1,507.0	2,399.0	3,301.6	4,184.0
Reserves	1,908.3	2,554.5	3,412.1	4,627.7	6,352.3	8,234.5
Reserves/Imports 1/	1.6	2.0	2.6	3.6	4.9	6.2
Reserves/Short-term debt 2/	103.3	133.5	182.4	286.9	381.6	482.1

Sources: WEO and IMF staff calculations.

1/ In months of prospective imports of goods and services.

2/ In percent of short-term debt on a remaining maturity basis.

F. Conclusion

54. **Whereas reserves are currently at their highest level in a decade and statutory indicators are exceeded by a large margin, standard indicators of reserve adequacy such as the ratios of reserve to imports and to short-term debt remain on the low side.** Taking into account the impact of oil price fluctuations on the current account, it is suggested that reserves for the region should cover at least 5 months of imports and about 250 percent of short-term debt on a remaining maturity basis in order to withstand a one-standard deviation fall in oil prices in any given year.³⁶ Going forward, an important challenge for the BEAC will be to manage the large projected oil inflows. Both the introduction of central banks or treasury bills to better sterilize the excess liquidity and the establishment of funds for future generations would be helpful. However, the amount of FX resources going outside the reserve pool into special funds would have to take into account the need to maintain adequate reserves.

³⁶ Using the 10-year standard deviation.

References

- Clément, Jean A.P., and others, 1996, *Aftermath of the CFA Franc Devaluation*, IMF Occasional Paper No. 138 (Washington, International Monetary Fund).
- Davis, Jeffrey, and others, 2001, “Stabilization and Savings Funds for Nonrenewable Resources: Experience and Policy Implications,” IMF Occasional Paper No. 205 (Washington: International Monetary Fund).
- Espinosa, Marco, and Mercedes Vera-Martin, 2004, “On Chile’s Holdings of Foreign Reserves,” in *Chile-Selected issues*, IMF Country Report No. 04/261 (Washington: International Monetary Fund).
- Gereirat, C., 2005, “Managing Oil Revenues in Gabon-Is there a Role for the Fund for Future Generations?” in *Gabon, Selected Issues and Statistical Appendix*, IMF Country Report No. 05/147 (Washington: International Monetary Fund).
- Hadjimichael, Michael T., and Michel Galy, 1997, *The CFA Franc Zone and the EMU*, IMF Working Paper 97/156 (Washington: International Monetary Fund).
- Hviding, Ketil, and Lucca Ricci, “The Case for Building International Reserves” Chapter 11 in *Post-Apartheid South Africa: The First Ten Years*, ed. by Michael Nowak and Luca Antonio Ricci (Washington: International Monetary Fund), forthcoming.
- Katz, Menachem, and others, 2004, *Lifting the Oil Curse: Improving Revenue Management in Sub-Saharan Africa*, Special Report (Washington: International Monetary Fund).
- Masson, Paul, and Catherine Patillo, 2004, *The Monetary Geography of Africa* (Washington: Brookings Institution).
- Yao, Koffi, 2005, “Holdings of International Reserves by CEMAC and WAEMU Countries” (unpublished; Washington: International Monetary Fund).

III. ASSESSING EXTERNAL COMPETITIVENESS IN THE CEMAC REGION³⁷

A. Introduction

55. **The constraints of a fixed exchange rate regime require careful attention to maintaining competitiveness.** The 1994 devaluation of the CFA franc was brought about by a prolonged deterioration of the terms of trade of the countries of the CFA franc zone, a steep rise in the countries' labor costs, and a nominal appreciation of the French franc against the U.S. dollar, all of which resulted in an overvalued exchange rate.³⁸ The devaluation was instrumental in strengthening the competitiveness of the CEMAC and WAEMU countries, and, together with prudent macro policies and structural reforms, helped GDP return to positive growth rates.³⁹ A decade later, an assessment of whether these competitiveness gains have been preserved or eroded is warranted.

56. **This chapter examines the evolution of competitiveness in the CEMAC region—as compared with the WAEMU.**⁴⁰ While a comprehensive assessment is complicated by the predominance of oil exports and by the weak statistical databases of some member countries, the analysis is based on a range of traditional indicators for which data are available, complemented by non-traditional, including survey-based, indicators. Results show a mixed picture of competitiveness in the CEMAC region. On the one hand, evidence of improvements includes the terms of trade and recent improvements in export profitability in the oil sectors. On the other hand, the real appreciation of the CFAF, stagnant or falling export market shares, declines in profitability and market shares of non-oil exports, unfavorable business climate indicators and structural rigidities are signs of competitiveness erosion, as well as Dutch disease.

57. **The paper is organized as follows:** Section B presents the definitions and measures of competitiveness. The analysis of competitiveness starts with the traditional macroeconomic exchange rate and terms of trade measures of competitiveness in Section C. Next, Section D analyzes export performance, market shares and profitability. Continuing the analysis on exports, it also discusses the diversification and input content of exports. Section E looks at some non-traditional descriptive measures of competitiveness in terms of business climate. Section F concludes and discusses policy recommendations.

³⁷ Prepared by Corinne Deléchat and Charalambos Tsangarides.

³⁸ The fixed exchange-rate regime of the CFA franc (CFAF) was adopted by the CFA franc zone countries in 1948. The franc zone countries include the eight members of the West African Economic and Monetary Union (WAEMU) and the six members of the Central African Economic and Monetary Union (CEMAC).

³⁹ The 50 percent devaluation in January 1994 was the only change in the exchange rate peg. Since the introduction of the euro in 1999, the CFAF has been pegged to the euro at CFAF 655.957 per €1.

⁴⁰ Given data constraints, the WAEMU region was used primarily for comparison purposes. A more thorough investigation is required to draw conclusions about the CFA region as a whole.

B. Definitions and Measures of Competitiveness

58. **External competitiveness is broadly defined as the ability of a country to operate efficiently and productively in relation to other countries. This involves raising its level of productivity, its ability to export its goods and services and maintaining high living standards for its citizens.** From a macroeconomic perspective, competitiveness is defined as the degree to which a nation can produce goods and services, which meet the test of international markets, while simultaneously maintaining and expanding the real incomes of its people over the long term, under free trade and fair market conditions (OECD, 1992). At the microeconomic level, competitiveness is the capacity to sell one's products profitably. To be competitive, a firm (and by extension, a country) must be able to undercut the prices or offer products of better quality (or with better service) than its competitors (Cockburn et al., 1998).

59. **Traditional indicators of competitiveness refer to two related concepts of external competitiveness.** They measure either (a) the extent to which traded goods and services can compete with traded goods and services of other countries, both at home and abroad; and (b) the extent to which production of traded goods and services is attractive relative to the production of non-traded goods and services. Specific exchange-rate-based indicators include nominal effective exchange rates, real effective exchange rates based on consumer price indices, export unit values, the relative price of traded goods to nontraded goods, normalized unit labor costs in manufacturing, and the ratio of normalized unit labor costs in manufacturing to value-added deflators (Lipschitz and McDonald, 1991; Marsh and Tokarick, 1994).⁴¹ In addition, for commodity-exporting developing countries, relative commodity price movements and thus terms of trade changes have been found to be an important determinant of real exchange rate movements (Cashin et al., 2004).

60. **Other traditional indicators of competitiveness include measures of the evolution of export flows, market shares and overall export profitability.** Strong export growth (if it is not associated with equally strong import growth), expansion in export market shares, and increasing export diversification all indicate improvements in competitiveness. Such trends are also usually associated with increasing profitability of exports, measured either as falling unit costs or increasing value added. These indicators also have the advantage to be available for most countries, with the exception of unit costs (see above) and sectoral value added. In the latter case alternative measures can be constructed, such as the ratio of exports to an index of wages or to various GDP deflators. For oil exporters, however, it is also important to look separately at the performance of non-oil exports, as export growth and profitability tend to be driven by developments in international oil prices rather than domestic factors, and as one expects the non-oil sector to exhibit "Dutch disease" symptoms.

⁴¹ Unit labor costs are used as an indicator of competitiveness and profitability of the manufacturing sector in countries where salaries constitute an important cost of production.

61. **Indicators of the business climate are useful non-traditional complements to the above measures.** As they provide information on the nature of structural obstacles to competitiveness, they are also of direct use to policymakers. This paper considers FDI flows, financial deepening and survey-based indicators of the investment climate. FDI flows reflect the attractiveness of a country's investment climate and tend to be correlated with increases in exports. Financial deepening indicators provide information about the cost and access to credit. Finally, survey-based indicators of the business climate and governance represent indirect or hidden costs of production, such as an inefficient or unpredictable legal and institutional framework (involving corruption, red tape, the inability to enforce contracts, etc.). Unfortunately, only few of these surveys cover most CEMAC countries. The ones with the better coverage are the World Bank's Doing Business project and the World Governance Indicators of Kaufmann et al. (Box 1).⁴²

C. Real Effective Exchange Rate and Terms of Trade Measures

Real effective exchange rate

62. **The devaluation of the CFA franc in 1994 corrected the overvaluation of the currency and improved the CFA region's external competitiveness.** The evolution of the region's real effective exchange rates (REER's)⁴³ in the aftermath of the January 1994 devaluation can be divided into three phases (Tables 1a and 1b and Figures 1a and 1b) :

(i) from January 1994 to December 1998 the REER's appreciated rapidly due to the surge in

	Jan 1994- Dec 1998	Jan 1999- Dec 2000	Jan 2001- Dec 2004
Percentage change			
Real effective exchange rate	50.8	-11.3	15.6
Nominal effective exchange rate	15.0	-8.6	12.0
Relative Price Index	31.7	-2.4	1.1
Cumulatively			
Real effective exchange rate	42.6	-9.8	18.4
Nominal effective exchange rate	14.2	-7.4	14.5
Relative Price Index	28.6	-1.8	1.6

Source: IMF, INS and Fund staff calculations.

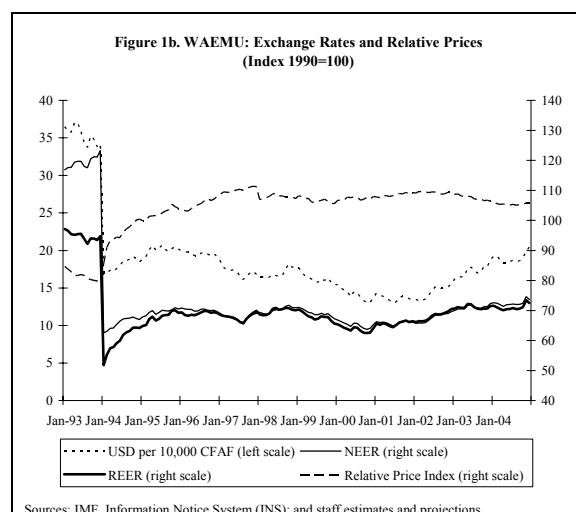
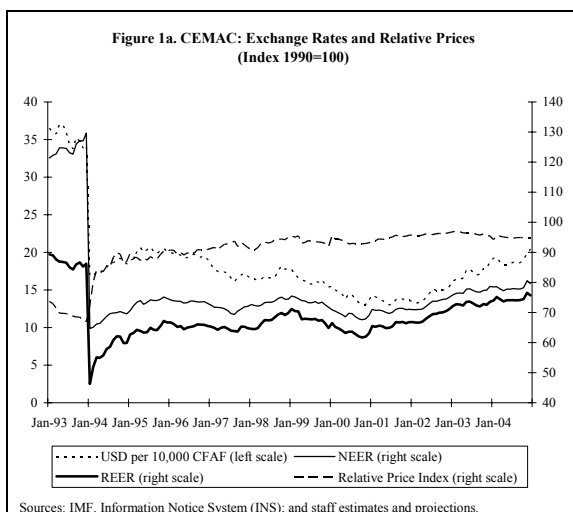
	Jan 1994- Dec 1998	Jan 1999- Dec 2000	Jan 2001- Dec 2004
Percentage change			
Real effective exchange rate	35.4	-8.8	10.1
Nominal effective exchange rate	13.2	-8.1	11.1
Relative Price Index	25.4	-0.2	-2.3
Cumulatively			
Real effective exchange rate	31.0	-8.8	12.2
Nominal effective exchange rate	12.7	-8.2	12.2
Relative Price Index	23.0	0.7	-2.7

Source: IMF, INS and Fund staff calculations.

domestic wages and prices following the devaluation; (ii) a short period of depreciation during January 1999 to December 2000 driven by the decline in the terms of trade resulting from declines in key export commodity prices and an increase in oil prices for WAEMU and increases in key import commodity prices (which outweighed the increase in oil prices) for

⁴² Competitiveness surveys are conducted by the World Economic Forum (Global Competitiveness Report), the International Management Development Institute (World Competitiveness Yearbook), and the World Bank (Doing Business). Indicators of governance such as those developed by Kaufmann, Kraay and Mastruzzi (2004) and Transparency International (perceptions of corruption index), also cover an important dimension of competitiveness.

⁴³ Unless indicated otherwise calculations of the REER's are based on relative CPIs.



CEMAC, as well as the slowdown in the world economy; and (iii) January 2001 until present, with the REER's appreciating, mainly due to the strengthening of the euro against the U.S. dollar. The large increase in oil prices over that period has so far failed to translate into higher inflation in the region, partly due to simultaneous offsetting factors such as the nominal exchange rate appreciation, low food prices and the increase in government deposits at the BEAC.

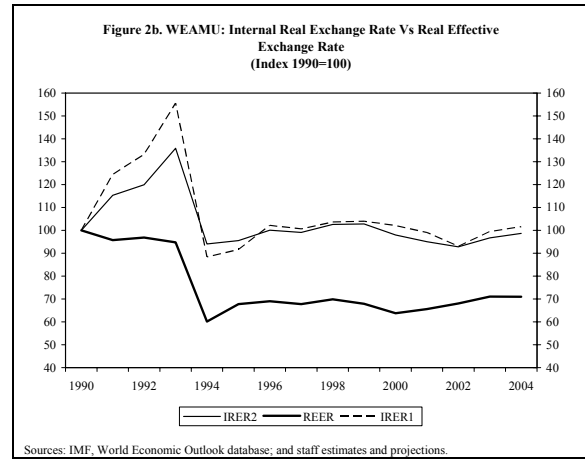
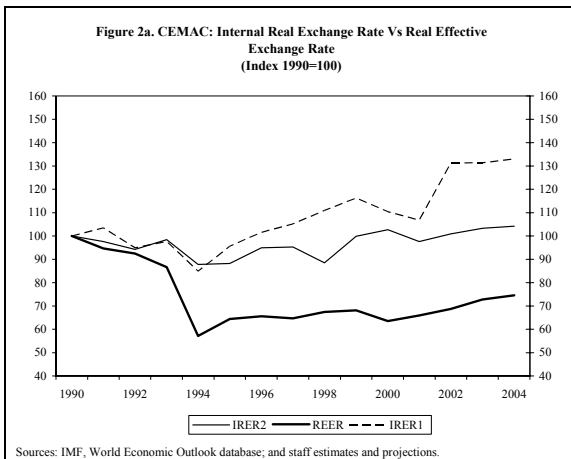
63. **Since 1994, for the CEMAC the real effective exchange rate (REER_C) has appreciated cumulatively by about 33 percent through December 2000, and by a further 18 percent from January 2001 to December 2004, with the latest appreciation essentially due to the strengthening of the euro to which the CFA franc is pegged. By December 2004, REER_C was at 88 percent of its pre-devaluation level. For the WAEMU region, the real effective exchange rate (REER_W) has appreciated cumulatively by about 22 percent through December 2000, and by a further 12 percent from January 2001 to December 2004, with the latest appreciation essentially due to the strengthening of the euro to which the CFA franc is pegged. By December 2004, the REER_W was at 76 percent of its pre-devaluation level.**

64. **Looking at the member countries of each region, we observe significant variations around the regional averages.** In the CEMAC region, there was a somewhat wider variance of REERs compared to WAEMU partly as a result of the emergence of new oil producers. Equatorial Guinea had the highest appreciation (114 percent of its pre-devaluation level) and Gabon the lowest appreciation (74 percent of its pre-devaluation level). In the WAEMU region, Benin has experienced the highest appreciation since the 1994 devaluation and Senegal the lowest, with their REERs reaching 61 percent (Senegal) and 92 percent (Benin) of their pre-devaluation levels.

Internal real exchange rate

65. The internal real exchange rate, which is measured as the ratio of the prices of nontradable goods (P_{NT}) to those of tradable goods (P_T), can be an appropriate measure of competitiveness for small economies, where the cost of production is reflected in the price of non-tradable goods, and the price of imports is determined in the world market. The difficulty in measuring the IRER is the lack of a straightforward definition of tradable and nontradable goods. For robustness of our results, we use two different approaches used in the literature (denoted as $IRER_1$ and $IRER_2$), which essentially incorporate two alternative methods to calculate the P_{NT} term.⁴⁴

66. The fluctuations in the IRER in both the CEMAC and WAEMU regions followed that of the external REER, but with wider amplitude, suggesting a bigger erosion of competitiveness (Figures 2a and 2b). Specifically:



- For the CEMAC, the total cumulative yearly appreciation of the IRER since the 1994 devaluation was about 34 percent (contrasted to the 28 percent for the REER), bringing it to 121 percent of its pre-devaluation value (or 21 percent above its pre-devaluation value).⁴⁵
- For the WAEMU, there was a steady real appreciation from the devaluation in 1994 through 1999, attributable to larger increases in the prices of non-traded goods (than in the prices of tradable goods), which burdened the profit of the tradable sector, and thereby hampered the much-needed export diversification of the economy. The total

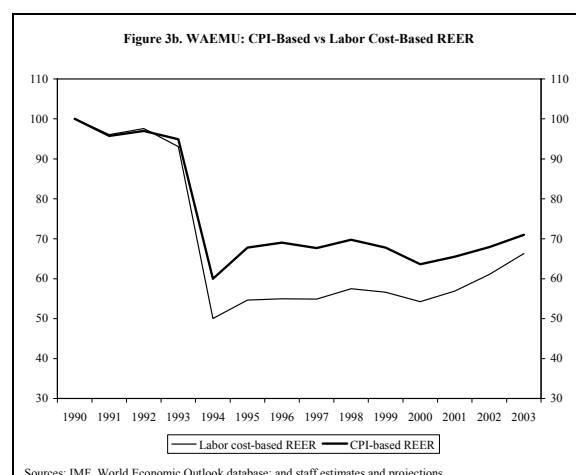
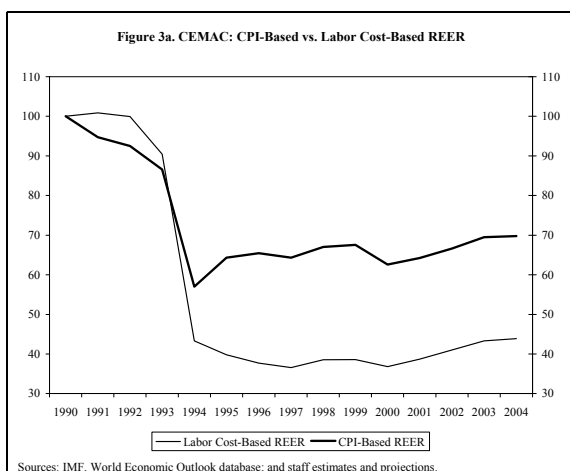
⁴⁴ The details on the calculation of the IRER using two alternative methodologies are presented in Appendix I. In brief, $IRER_1 = (CPI / P_T)^{1/(1-z)}$; $IRER_2 = [(p_y - S_x p_x) / (1 - S_x)] / P_T$. CPI denotes the consumer price index; z denotes the share of imported consumption goods in total private consumption; S_x is the share of exports to GDP; p_y is the GDP deflator; and p_x is the price of the export good; and import prices (P_M) were used as a proxy for the price of tradable goods (P_T).

⁴⁵ Calculated as simple average of the two measures of IRER (for both WAEMU and CEMAC).

cumulative yearly appreciation of the IRER since the 1994 devaluation was about 10 percent (contrasted to the 18 percent for the REER), bringing it to 69 percent of its pre-devaluation value.

Other real exchange rate measures

67. **Labor-cost based REERs appear to have remained below CPI-based REERs in both zones** (Figures 3a and 3b).⁴⁶ In the WAEMU region, the labor cost-based REER depreciated more than CPI-based indicators after the 1994 devaluation, and has since remained at lower levels. The CEMAC region shows a similar pattern.⁴⁷ This might suggest that the zones' competitiveness in international markets seems better when cost-based REERs rather than CPI-based REERs are used. However, this result should be taken with caution given that the nominal wage index, especially for the CEMAC region, might have some measurement errors. In addition, this highlights the need to conduct robustness checks using other measures of labor costs.

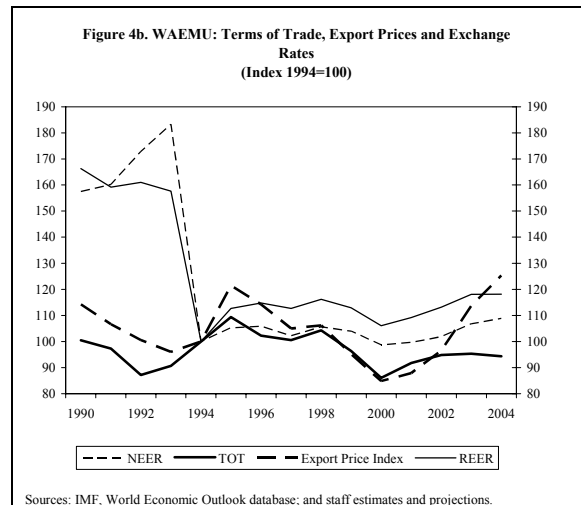
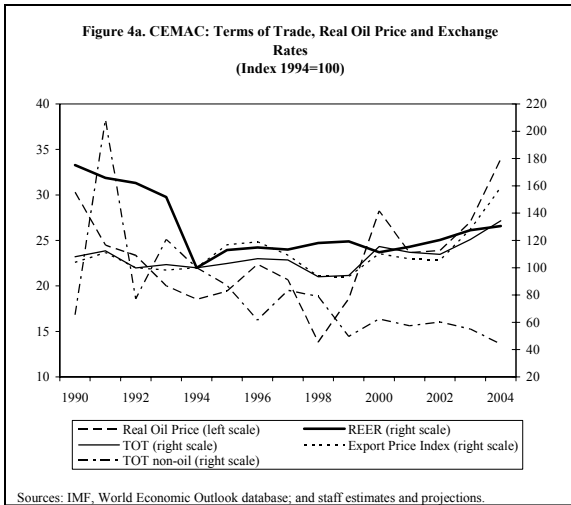


Terms of trade and export prices

68. **Terms of trade for the CEMAC have been recently improving, following the trend in oil prices.** Figure 4a shows that the impact of the appreciating REER on competitiveness was somewhat contained over the past two years, as CEMAC exports increased, terms of trade improved due to oil price increases and overall export profitability was enhanced. In the case of the WAEMU, export prices (measured in local currency) have been increasing sharply since 2000, but the terms of trade have remained almost flat since 2002. In the case of the CEMAC, there seems indeed to be a close relationship between

⁴⁶ To calculate labor-cost-based REER's we multiply the CPI-based REER by the real wage index (= nominal wage index/CPI). Unfortunately, no direct measure of unit labor costs is available for CEMAC countries.

⁴⁷ Equatorial Guinea was excluded from the analysis because of incomplete data.

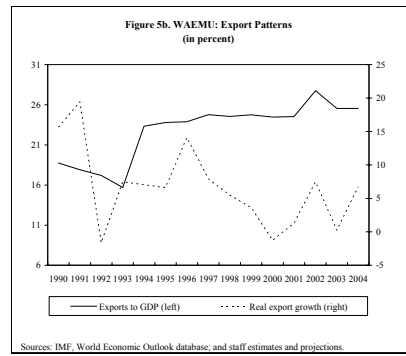
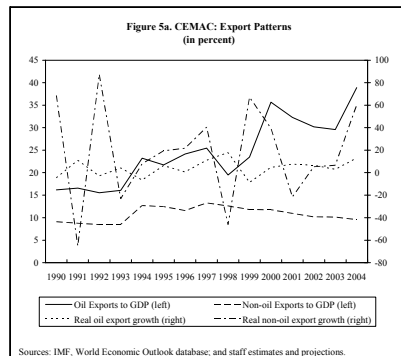


real oil prices and the terms of trade. However, the link is not that clear for WAEMU countries as a group, as their commodity exports are diverse and their prices do not all move together (Figure 4b). It is beyond the scope of this paper to further examine the link between the terms of trade and the real effective exchange rate, but for the CEMAC there is evidence of a long-run relationship between both series.⁴⁸

D. Overall Export Performance, Market Penetration, and Profitability

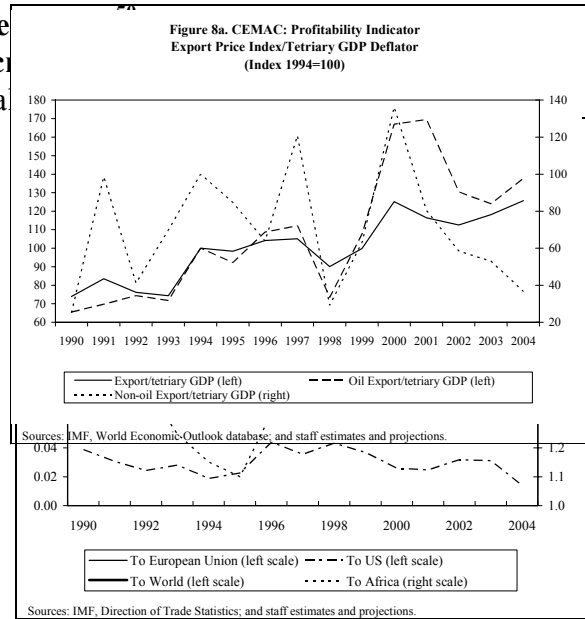
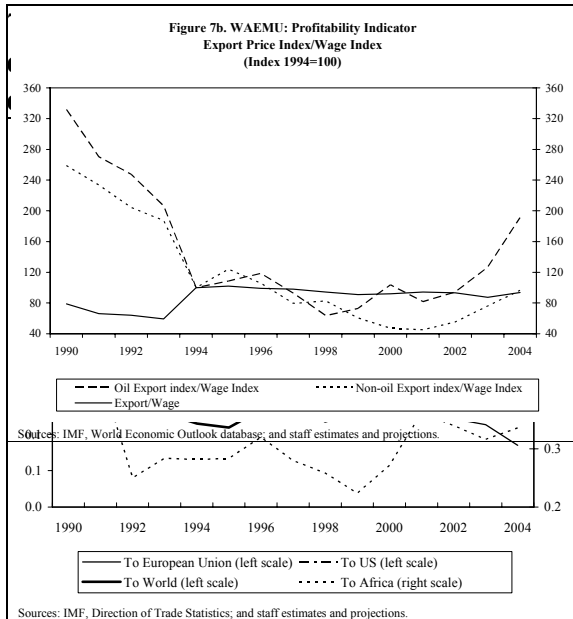
Export performance and market shares

69. **The CEMAC’s overall export performance has been dominated by the oil sector.** For the CEMAC region, we see a clear increase of both share and volume of oil exports in line with the increased oil output; at the same time there is a decline of non-oil exports to GDP and a rather surprising recent increase in the volume of non-oil exports⁴⁹ (Figures 5a and 5b). At the same time, exports to GDP have been roughly constant for the WAEMU region and volumes have been growing by an average of 2 percent since 2000.



⁴⁸ See Chapter 1 on “The Evolution of Actual and Equilibrium Real Effective Exchange Rates in the CEMAC Region.”

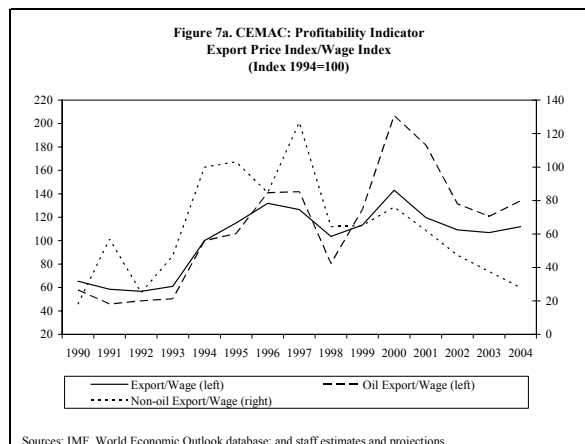
⁴⁹ The latter is driven by Chad’s 210 percent and Gabon’s 650 percent increases from 2003 to 2004.



1 percent) since 2000. In contrast, over the same period, WAEMU export market shares to the world and EU appear to be slightly increasing, and decreasing for Africa and the US (Figure 6b), while intra-regional exports have been expanding (and are much higher than in CEMAC). Looking at the evolution of market shares to the world since the devaluation, there has been a small overall improvement for CEMAC while for WAEMU shares have fallen.

Profitability

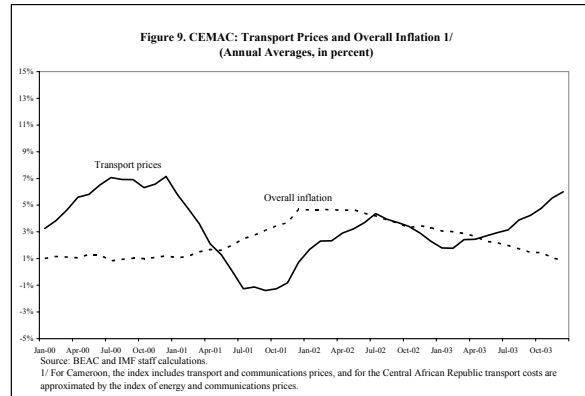
71. **Overall profitability of exports in the CEMAC region has also been driven by the evolution of profitability in the oil sector**, itself driven by the oil price fluctuations, and has accordingly been improving in recent years. At the same time, profitability of non-oil exports has been declining since 2000 (Figures 7a and 8a). The measures of profitability used here are the ratios of the export price index to tertiary



GDP deflator (distinguishing between oil and non-oil indices for the CEMAC), and the export price index to wages deflator. In the case of WAEMU (Figure 7b), the indices of profitability show a net decline since 2003, but contradicting conclusions for 2004.

⁵⁰ Defined as the ratio of CEMAC (WAEMU) region's total exports to the total imports of selected groups/countries.

72. **Production costs, including factor productivity, wages, interest and exchange rates, prices of material inputs, public utilities and transports, are an important dimension of profitability and hence competitiveness** (Cockburn et al., 1998). However, the CEMAC region suffers from the lack of comparable and reliable information on factor costs and factor productivity, wages and employment for all six-member countries—aside from the crude wage index discussed above. Available information nevertheless suggests that **transport costs** have been increasing in the region (in particular in Gabon, and, to a lesser extent, in Cameroon). At the regional level, transport prices have tended to grow since end- 2001 whereas inflation has followed a downward trend since January 2002 (Figure 9).

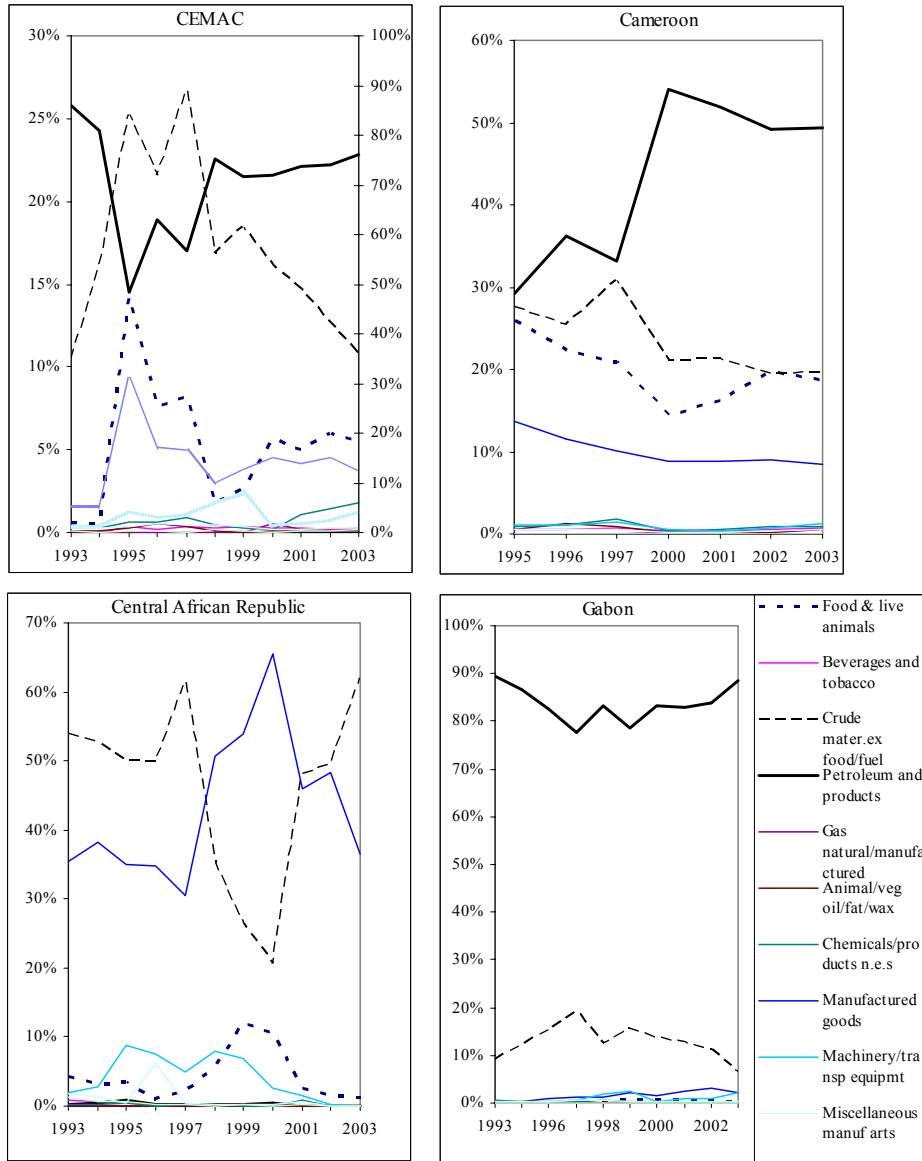


Diversification and input content of exports

73. **The composition of trade in the CEMAC region has been increasingly dominated by oil sector exports** (76 percent of 2003 total exports). Among non-oil exports, raw materials (crude matter excluding oil and food), food and live animals, and manufactured products represented the main categories in 2003—respectively 10 percent, 6 percent, and 4 percent of the total, compared with 25, 14 and 9 percent of the total in 1995. There are, however, important variations between CEMAC countries, with oil representing about 90 percent of total 2003 exports in Congo, Equatorial Guinea, and Gabon, but only 50 percent in Cameroon and 20 percent in Chad.⁵¹ The most significant non-oil export category for each country is raw materials. Cameroon is the largest and most diversified economy, with a mix of oil, raw materials, food and live animals and manufactures as main export products (Figure 10).

⁵¹ In the case of Chad all export revenues have remained offshore until mid-2004.

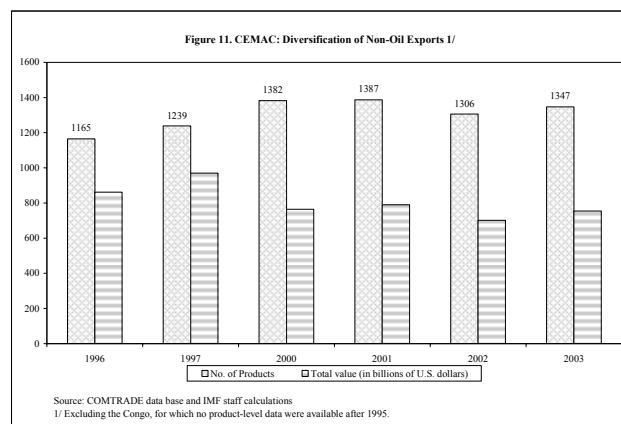
Figure 10. CEMAC: Exports by Main Product Category



Source: COMTRADE data base and IMF staff calculations

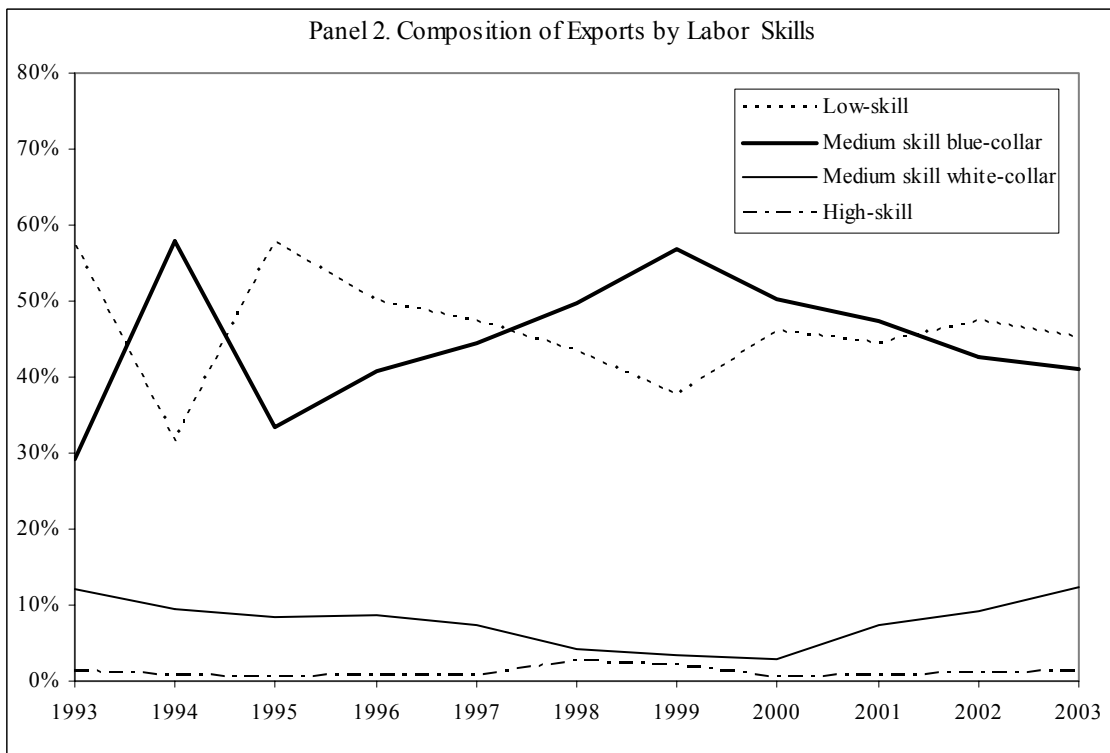
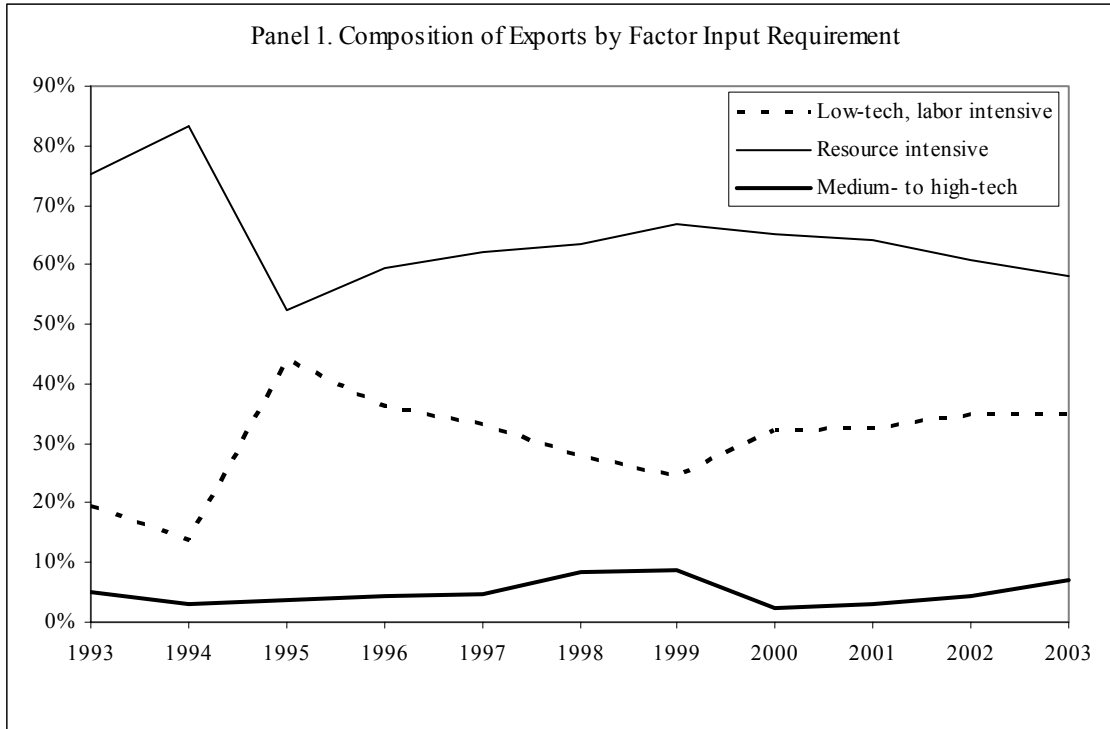
74. **Since the late 1990s, non-oil exports have not only declined in absolute value, they have also become less diversified.** The number of non-oil products exported in the region (using the SITC classification at the 4-digit level) peaked in 2001 and then slowly declined (Figure 11).

75. **Based on input or skill-content, the value added of non-oil exports—another important dimension of competitiveness—has been declining since the late 1990s.** Using taxonomies developed by Landesmann and Stehrer (2003) and Peneder (1999), export categories have been classified according to their input or skill content (Table 2).⁵² Labor-intensive, low-tech exports such as food and beverages, animal products, textile, apparel, and footwear have been increasing since 1999 while resource intensive exports have been stable or slowly declining. Medium to high-tech exports such as machinery and equipment and medical products fell in 2000 and still represent only 7 percent of total non-oil exports (Figure 12, panel 1). Similarly, looking at the skill composition, low-skill exports (defined as labor-intensive exports above plus metals) have been increasing since 1999, while medium-skilled blue collar exports (gas and electricity, transport equipment, and wood manufactures/furniture) have been declining. Medium-skill white collar exports (scientific, electrical and telecommunications equipment, chemicals, and fertilizers) followed a u-shaped pattern, from over 10 percent of total non-oil exports to 3 percent in 2000, and back to 12 percent in 2003 (Figure 12, panel 2).



⁵² See Box 1 in Murgasova, 2004 for more details on the taxonomies and their application to the case of Poland.

Figure 12. CEMAC: Composition of Exports by Factor Input and Skill Requirement, 1993-2003.



Source: COMTRADE data base and IMF staff calculations

E. Business Climate Indicators

Figure 13. CEMAC: FDI flows

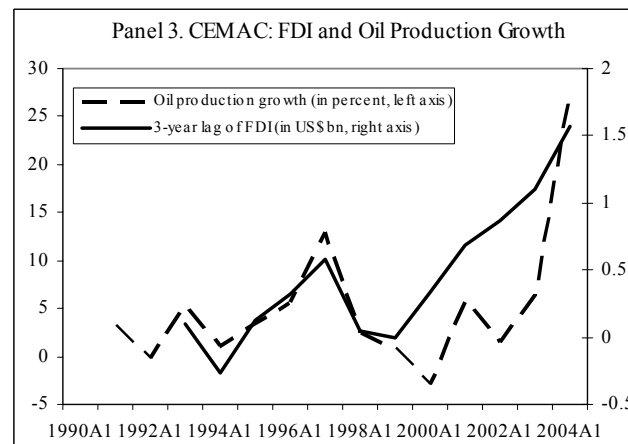
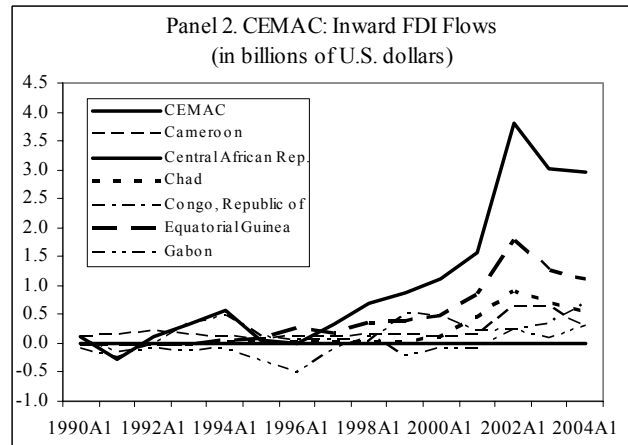
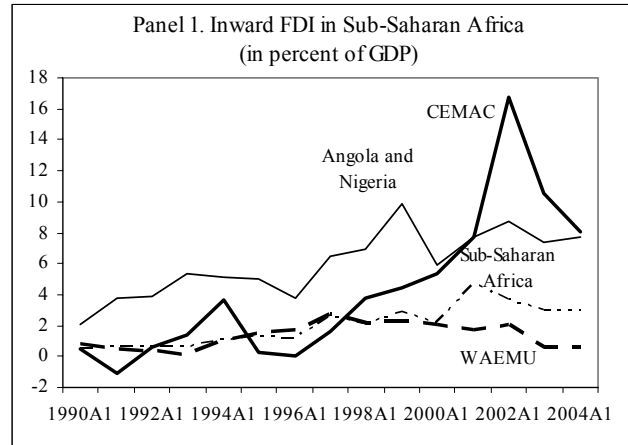
Evolution of FDI flows

76. Compared to the WAEMU and other African oil exporters, the size of recent FDI flows to the CEMAC in relation to GDP is impressive. Inward FDI (as share of GDP) to CEMAC has since 2001 overtaken that into Nigeria and Angola, and is well above that in WAEMU and into the whole sub-Saharan region (Figure 13, panel 1). The sustainability of these inflows is however questionable, as they appear largely linked to the region's oil production (see below).

77. **FDI flows to the CEMAC countries have been increasing substantially since the late 1990s.** A large part of these inflows can be attributed to oil-sector-related investments, in particular in Chad and Equatorial Guinea, but is already tapering off as oil production is coming on stream. In Cameroon, FDI is likely to have been more diversified but has also declined recently probably due to the poor economic performance (Figure 13, panels 2 and 3). In the WAEMU, FDI levels are much lower and dominated by investment in Côte d'Ivoire, explaining the decline after 2002.

Financial deepening⁵³

78. **The lack of financial depth and in particular the difficult access to formal bank accounts and credit create**



Source: WEO and IMF staff calculations.

⁵³ See Chapter 4 “The Banking Sector in the CEMAC Region: Issues and Developmental Challenges,” for a more detailed discussion.

additional obstacles for businesses and increase production costs. While financial depth has been increasing in sub-Saharan Africa and in WAEMU over the past few years, it has remained stagnant in the CEMAC. The ratio of broad money to GDP in the CEMAC is about one-quarter of that for the whole sub-Saharan Africa and a half of WAEMU's. Credit to the private sector is among the lowest in sub-Saharan Africa and far lower than countries with similar income levels. Whereas the ratio of credit to GDP amounts to 13 percent in sub-Saharan Africa and to 15 percent in the WAEMU, it is only 7 percent in the CEMAC. Finally, lending to the private sector is limited to short-term, trade-related loans to large enterprises.

Survey-based indicators of the business environment

79. **Various surveys on the business environment and governance are now available, although not all of them cover the totality of CEMAC members.**⁵⁴ Among the surveys with the most relevant information available for the CEMAC region are the World Bank's Doing Business Database, which covers all CEMAC countries but Equatorial Guinea and Gabon for 2002, and the Worldwide Governance Indicators (Kaufmann et al., 2004). These indicators now cover 186 countries, including all CEMAC countries, through 2004 (Box 1).

80. **Results of the Doing Business surveys for the CEMAC countries point to key structural impediments to developing a competitive private sector** (Table 3). The cost and minimum capital required to start a business and to register property are higher than in sub-Saharan Africa, and labor regulations are about 40 percent more rigid. Access to credit is more difficult than in sub-Saharan Africa, as it is about 80 percent more costly to create collateral, and as collateral and bankruptcy laws are less adequate. For investors, disclosure of ownership and financial information is not as satisfactory in the CEMAC as in sub-Saharan Africa, and it is more difficult and costly to enforce contracts. Finally, closing a business is about twice as costly and time consuming, and the recovery rate is extremely low (an average of 8 cents for one dollar of original investment compared to 18 for the region).

81. **The CEMAC countries also tend to rank below average on important dimensions of governance compared to other countries at a similar level of development.** These dimensions include government effectiveness, regulatory quality, the rule of law and control of corruption (Figure 14). The government effectiveness indicator combines information on the quality of public service provision, the quality of the bureaucracy, the competence of civil servants, the independence of the civil service from political pressures, and the credibility of the government's commitment to policies. Regulatory quality includes measures of the incidence of market-unfriendly policies such as price controls or inadequate bank supervision, as well as perceptions of the burdens imposed by excessive regulation in areas such as foreign trade and business development. Rule of law

⁵⁴ The 2005 World Bank Development Report focuses specifically on the investment climate in developing countries and the last section on Selected Indicators provides a comprehensive review of available sources of investment climate-related indicators (See World Bank, 2005).

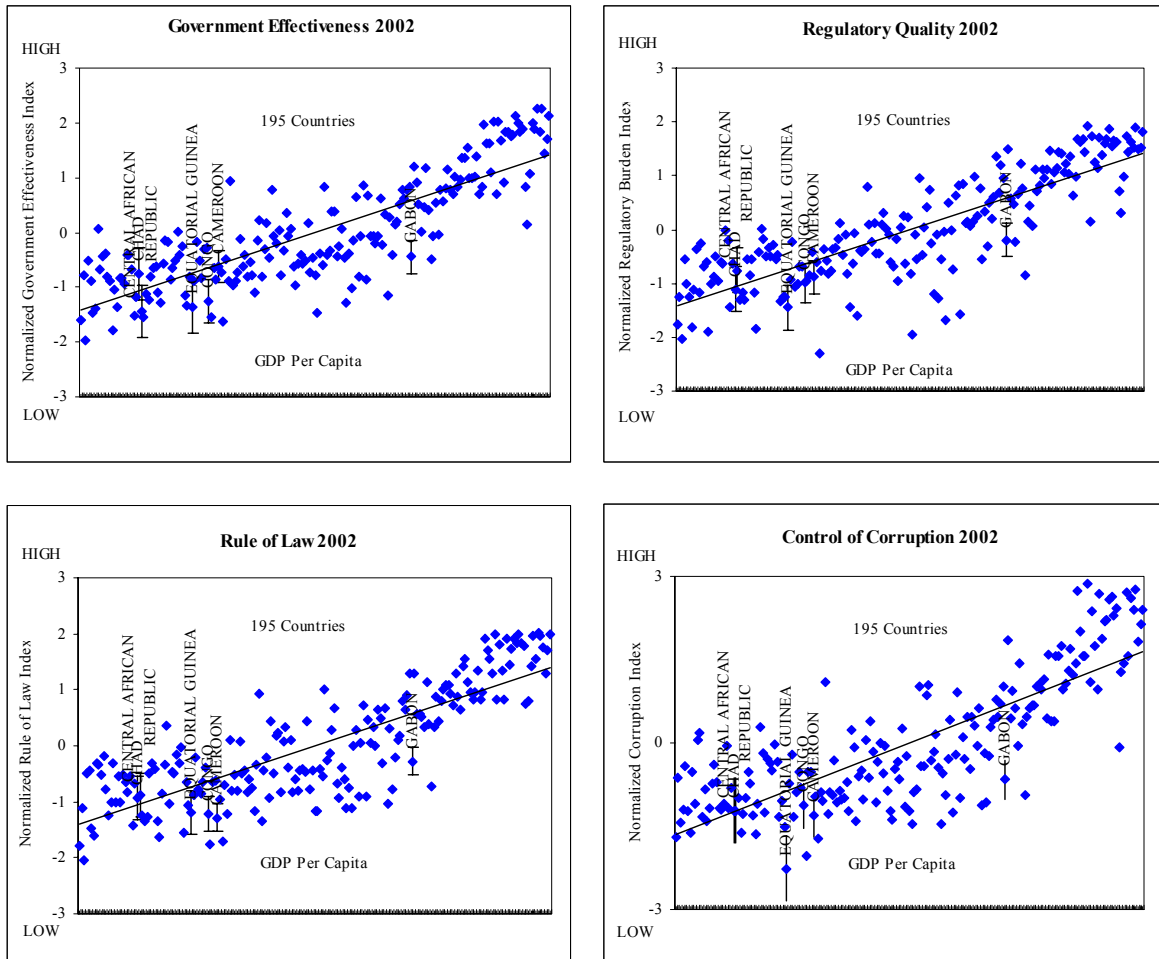
includes measures of perceptions of the incidence of crime, the effectiveness and predictability of the judiciary, and the enforceability of contracts. Control of corruption includes perceptions of corruption defined as the exercise of public power for private gain.

Box 1. Recent Business Climate and Governance Indicators

The World Bank's Doing Business project collects information on the number of calendar days, the number of procedures and the costs it takes to complete various business transactions. It uses a defined hypothetical case to standardize comparisons and report the time if all procedures mandated by law are followed and are completed within the officially designated time for each step. The database initially covered 130 countries in 2003, now covers 186, with information for 2004. It covers the following areas: starting a business, hiring and firing workers, registering property, getting credit, protecting investors, enforcing contracts, and closing a business. Judgments are based on assessment of up to five local experts.

The Worldwide Governance Indicators (WGIs) database provides governance indicators for 199 countries covering six dimensions of governance, over four time periods: 1996, 1998, 2000, and 2002. The indicators are constructed by aggregating existing surveys and indicators. Dimensions covered include (i) voice and accountability; (ii) political stability and absence of violence; (iii) government effectiveness; (iv) regulatory quality; (v) rule of law; and (vi) control of corruption. Compared with the Transparency International (TI) Corruption Perceptions' index, the WGI indicators relies on a broader set of sources and covers about twice as many countries as the TI index discards countries with fewer than 3 data sources. Although indications about relative levels of corruptions are similar between the WGIs and the TI index, margins of error appear much larger for the TI index.

Figure 14. CEMAC: Selected Governance Indicators



Source: "Governance Matters III: Governance Indicators for 1996-2002" by Daniel Kaufmann, Aart Kraay and Massimo Mastruzzi, 2003.

F. Conclusions and Policy Recommendations

82. **Overall, the evidence on competitiveness in the CEMAC region is mixed.** Real effective exchange rate measures indicate a clear appreciation following the 1994 devaluation, with the REER now being about 20 percent above its pre-depreciation level. However, the extent of the appreciation depends on which indicator is used, being less pronounced when looking at the labor-cost REER compared to the CPI, and being most pronounced using internal real exchange rate measures. By comparison, the extent of the real appreciation is smaller in the WAEMU region, where the REER appreciation in comparison to the pre-devaluation level has been lower than in the CEMAC region.

83. **In spite of the real appreciation, the terms of trade and export profitability in the CEMAC have recently improved—although such improvements have failed to**

translate into increased export market shares. This is partly due to the fact that the recent appreciation of the REER was driven mostly by nominal exchange rate changes and not by price level differentials. Also, the overall terms of trade and profitability improvements have been driven by the oil price and volume increases, as the **non-oil exports terms of trade and profitability have been declining since the late 1990s.** The evolution of profitability of exports is robust to the various measures used, being the ratio of the (oil and non-oil) export index to (oil and non-oil) GDP deflators, wage index or tertiary GDP deflator. Export profitability in the WAEMU region has remained roughly constant since 1994.

84. **Looking further at the evolution of non-oil exports, CEMAC economies seem to present symptoms of Dutch disease.** Not only has the share of non-oil exports in total exports and in GDP been declining since 1995, in the last four–five years their absolute value has also declined and they have become somewhat less diversified. As overall price and wage inflation has been rather subdued in the same period, it is difficult in the absence of more detailed data to make a judgment on the extent to which the traditional channel of increasing wages in the non-tradables sector has come to play.

85. **Structural rigidities leading to supply constraints in the CEMAC countries also seem responsible for the competitiveness challenges of non-oil exports.** Business climate indicators point to important obstacles to private sector development, including the lack of access to credit and high cost of collateral, an inadequate legal and judicial framework, and labor-market rigidities. Recent large increases in FDI flows have predominantly been associated with investments in the oil sector and the sustainability of such flows remains questionable.

86. **Strengthening competitiveness is a key objective of the CEMAC member countries and an important component of the framework for negotiating an Economic Partnership with the European Union.** In order for the CEMAC—and the CFA region in general—to improve its external competitiveness position, emphasis should be placed in some key areas such as: (i) the pursuit of structural reform policies to boost labor productivity, reduce excessive factor costs, and diversify the base of production and exports of the economies; (ii) the reduction of factor costs through the improvement of access to new technologies, the implementation of integration programs in the CEMAC and WAEMU regions, notably in the road infrastructure, telecommunications and energy, as well as those facilitating interregional trade; (iii) creating the conditions for a further increase in domestic and foreign private investment in all sectors of economic activity (especially in the non-oil sector) including by deepening the judicial, legal, and institutional framework.

References

- Cashin P., L. Cespedes, and R. Sahay, 2004, "Commodity Currencies and the Real Exchange Rate," *Journal of Development Economics*, Vol. 75, pp. 239–268.
- Chen, Y., and K. Rogoff, 2002, "Commodity Currencies and Empirical Exchange Rate Puzzles," IMF Working Paper No. 02/27 (Washington: International Monetary Fund).
- Cockburn, J., E. Siggel, M. Coulibaly, and S. Vézina, 1998, "Measuring Competitiveness and its Sources: The Case of Mali's Manufacturing Sector" (unpublished).
- Durand, M., J. Simon, and C. Webb, 1992, OECD's indicators of International Trade and Competitiveness, OECD Economic Department Working Papers, No.120 (Paris: Organization for Economic Cooperation and Development), available via the internet: <http://www.oecd.org/dataoecd/19/56/28740598.pdf>.
- Edwards, S., 1989, *Real Exchange Rates, Devaluation and Adjustment: Exchange Rate Policy in Developing Countries* (Cambridge, Massachusetts: MIT Press).
- , 1994, "Real and Monetary Determinants of Exchange Rate Behavior: Theory and Evidence from Developing Countries" in *Estimating Equilibrium Exchange Rates*, ed. by John Williamson (Washington: Institute for International Economics).
- Hernández-Catá, C. Francois, and others, 1998, *The West African Economic and Monetary Union, Recent Developments and Policy Issues*, IMF Occasional Paper No. 170 (Washington: International Monetary Fund).
- Hinkle, L., and P. J. Montiel, 1999, *Exchange Rate Misalignment: Concepts and Measurement for Developing Countries* (Washington: World Bank).
- Hinkle, L., and Fabien Nsengiyumva (1999), "Internal Real Exchange Rates: Concepts and Measurement" in *Exchange Rate Misalignment: Concepts and Measurement for Developing Countries*, ed. by Hinkle and Montiel (Washington: World Bank).
- Isard, P., and H. Faruquee, ed., 1998, *Exchange Rate Assessment: Extensions of the Macroeconomic Balance Approach*, IMF Occasional Paper No. 167 (Washington: International Monetary Fund).
- Kaufmann, D., A. Kraay, and M. Mastruzzi, 2004, *Governance Matters III: Governance Indicators for 1996–2002*, available via the internet, as well as the database: <http://www.worldbank.org/wbi/governance/govdata2002>.

- Landesmann, M., and R. Stehrer, 2003, "Structural Patterns of East-West European Integration: Strong and Weak Gerschenkron Effects," in *Structural Report 2003 on Central and Eastern Europe*, Vol. 1 (Vienna: The Vienna Institute for International Economic Studies (wiiw)).
- Lipschitz, L., and D. McDonald, 1991, "Real Exchange Rates and Competitiveness: A Clarification of Concepts, and Some Measurements for Europe," IMF Working Paper 91/25 (Washington: International Monetary Fund).
- Marsh, I. W., and S. P. Tokarick, 1994, "Competitiveness Indicators - A Theoretical and Empirical Assessment," IMF Working Paper 94/29 (Washington: International Monetary Fund).
- Murgasova, Z., 2004, "Assessing Competitiveness," in *Republic of Poland: Selected Issues*, IMF Country Report No. 04/197 (Washington: International Monetary Fund).
- OECD, 1992, *Technology and the Economy: The Key Relationships*, The Technology/Economy Program (Paris: Organization for Economic Cooperation and Development).
- Peneder, M., 1999, "Intangible Investment and Human Resources: The New WIFO Taxonomy of Manufacturing Industry," WIFO Working Paper No. 114 (Vienna: Austrian Institute of Economic Research).
- World Bank, *Doing Business Project*, database available via the internet:
<http://rru.worldbank.org/DoingBusiness/>.
- World Development Report 2005: A Better Investment Climate for Everyone*, 2005, available via the internet:
<http://web.worldbank.org/wbsite/external/extdec/extresearch/extwdrs/extwdr2005/0,,contentMDK:20259914~menuPK:477673~pagePK:64167689~piPK:64167673~theSitePK:477665,00.html>.
- Zanello, A., and D. Desruelle, 1997, "A Primer on the IMF's Information Notice System," IMF Working Paper No. 97/71" (Washington: International Monetary Fund).

Table 2. Classification of Export Categories by Factor Inputs and Labor Skill Requirements

SITC (revision 3) 2-digit classification		Taxonomy 1 Factor Inputs	Taxonomy 2 Labor Skills
00	Live animals other than animals of division 03	1	1
01	Meat and meat preparations	1	1
02	Dairy products and birds' eggs	1	1
03	Fish (not marine mammals), and preparations thereof	1	1
04	Cereals and cereal preparations	1	1
05	Vegetables and fruit	1	1
06	Sugars, sugar preparations and honey	1	1
07	Coffee, tea, cocoa, spices, and manufactures thereof	1	1
08	Feeding stuff for animals (not including unmilled cereals)	1	1
09	Miscellaneous edible products and preparations	1	1
11	Beverages	1	1
12	Tobacco and tobacco manufactures	1	1
21	Hides, skins and furskins, raw	1	1
22	Oil-seeds and oleaginous fruits	1	1
23	Crude rubber (including synthetic and reclaimed)	2	3
24	Cork and wood	2	2
25	Pulp and waste paper	2	3
26	Textile fibres (other than wool tops and other combed wool)	1	1
27	Crude fertilizers/ minerals (excl. coal, petroleum and precious stones)	2	3
28	Metalliferous ores and metal scrap	2	1
29	Crude animal and vegetable materials, n.e.s.	1	1
32	Coal, coke and briquettes	2	1
33	Petroleum, petroleum products and related materials	2	2
34	Gas, natural and manufactured	2	2
35	Electric current	2	2
42	Fixed vegetable fats and oils, crude, refined or fractionated	1	1
43	Animal or vegetable fats and oils, processed;	1	1
51	Organic chemicals	2	3
52	Inorganic chemicals	2	3
53	Dyeing, tanning and colouring materials	2	3
54	Medicinal and pharmaceutical products	3	4
55	Essential oils and resinoids and perfume materials;	3	3
56	Fertilizers (other than those of group 272)	2	3
57	Plastics in primary forms	2	3
58	Plastics in non-primary forms	2	1
59	Chemical materials and products, n.e.s.	2	3
61	Leather, leather manufactures, n.e.s., and dressed furskins	1	1
62	Rubber manufactures, n.e.s.	2	1
63	Cork and wood manufactures (excluding furniture)	2	2
64	Paper, paperboard and related articles	2	3
65	Textile yarn, fabrics, made-up articles, n.e.s., and related products	1	1
66	Non-metallic mineral manufactures, n.e.s.	2	1
67	Iron and steel	2	1
68	Non-ferrous metals	2	1
69	Manufactures of metals, n.e.s.	2	1
71	Power-generating machinery and equipment	3	3
72	Machinery specialized for particular industries	3	4
73	Metalworking machinery	3	4
74	General industrial machinery and equipment, and machine parts.	3	4
75	Office machines and automatic data-processing machines	3	4
76	Telecommunications and sound-recording and reproducing equipment	3	3
77	Electrical machinery, apparatus and appliances, electrical parts thereof	3	3
78	Road vehicles (including air-cushion vehicles)	3	2
79	Other transport equipment	3	2
81	Prefabricated buildings; sanitary, plumbing, heating and lighting fixtures	3	1
82	Furniture, and parts thereof	3	2
83	Travel goods, handbags and similar containers	1	1
84	Articles of apparel and clothing accessories	1	1
85	Footwear	1	1
87	Professional, scientific and controlling instruments and apparatus, n.e.s.	3	3
88	Photographic equipment, supplies and optical goods, watches and clocks	3	3
89	Miscellaneous manufactured articles, n.e.s.	3	2
96	Coin (other than gold coin), not being legal tender	2	1
97	Gold, non-monetary (excluding gold ores and concentrates)	2	1

Taxonomy 1	Taxonomy 3
1 Low-tech, labor intensive	1 Low-skill
2 Resource intensive	Medium skill blue-collar
3 Medium-to-high tech	3 Medium skill white-collar
	4 High-skill

Sources: UN Comtrade database; Taxonomy 1 is based on Landesmann and Stehrer (2003); Taxonomy 2 is based on Peneder (1999).

Table 3. CEMAC: Doing Business Survey, 2004

Indicator	<i>Cameroon</i>	<i>Central African Rep.</i>	<i>Chad</i>	<i>Congo, Rep.</i>	<i>CEMAC Average 1/</i>	<i>sub-Saharan Africa Average</i>
1. Starting a business						
Number of procedures	12	10	19	8	12.3	11
Time (days)	37	14	75	67	48.3	60
Cost (% of income per capita)	182.5	204.5	344.2	317.6	262.2	225.2
Min. capital (% of income p.c.)	232	559.2	610.4	244.6	411.6	254.1
2. Hiring and Firing Workers						
Rigidity of Employment Index 1/	74	76	80	86	79.0	56
Firing costs (weeks of wages)	46	37	47	42	43.0	59.5
3. Registering Property						
Number of procedures	5	3	6	6	5.0	7
Time (days)	93	69	44	103	77.3	114
Cost (% of property value)	18.8	17.4	13.3	22.5	18.0	13.2
4. Getting Credit						
Cost to create collateral (% of income p.c.)	87.6	15	48.9	151.1	75.7	41.8
Legal rights index 2/	4	3	3	3	3.3	4.6
Credit information index 3/	2	3	3	3	2.8	2.1
5. Protecting Investors						
Disclosure index 4/	1	1	1	3	1.5	2.1
6. Enforcing Contracts						
Number of procedures 5/	58	45	52	47	50.5	35
Time (days)	585	660	526	560	582.8	434
Cost (% of debt)	36.4	72.2	54.9	43	51.6	43
7. Closing a Business						
Time (years)	3.2	4.8	10	3	5.3	3.6
Cost (% of estate) 6/	18	76	76	38	52.0	20.5
Recovery rate (cents on the dollar)	21.4	0	0	10.3	7.9	17.1

Source: World Bank, Doing Business Database 2005, and IMF staff calculations.

1/ Simple average for Cameroon, the Central African Republic, Chad, and the Congo (representing 68 percent of the region's real 2004 GDP).

2/ 100=more rigid (rigid hours, difficulty of hiring and firing).

3/ 10=better collateral and bankruptcy laws.

4/ 6= more credit information available.

5/ 7=better disclosure of ownership and financial info.

6/ From the time a complaint is filed until actual payment.

7/ Court costs and fees

8/ Measures the efficiency of bankruptcy procedures

Calculation of the Internal Real Exchange Rate

The internal exchange rate (IRER) is calculated as the ratio of the domestic prices of nontradables to that of tradable goods. In order to categorize the consumption bundle into tradable and non-tradable goods we use two proxies used in the literature.

First proxy: $IRER_1$

Using the definition of IRER:

$$IRER = P_{NT} / P_T \quad (1)$$

Also, the consumer price index (CPI) can be defined as a weighted average of prices of tradable and non-tradable goods. Let y be the share of tradable goods in the CPI basket, then:

$$CPI = (P_T)^y (P_{NT})^{1-z} \quad (2)$$

Reorganizing (2) and substituting (1), the IRER can be expressed as:

$$IRER_1 = (CPI / P_T)^{1/(1-z)} \quad (3)$$

Import prices were used as a proxy for prices of tradable goods, and the share of imported consumption goods in total private consumption was used as a proxy for z .⁵⁵

Second proxy: $IRER_2$

The second proxy was based on the three good model⁵⁶ of Devarajan, Lewis and Robinson (1993). The model categorizes the economy as producing a domestic good and an exported good. Aggregate income is given by:

$$p_y Y = p_d D + p_x X \quad (4)$$

⁵⁵ The same methodology was used in IMF Occasional Paper No. 170 by Hernández-Catá, C. Francois, P. Masson, P. Bouvier, P. Deroz, D. Desruelle, and A. Vamvakidis (1998), and also discussed in Hinkle and Nsengiyumva (1997).

⁵⁶ The domestically produced good, the imported consumption good and the export good.

where p_y , p_d and p_x are the GDP deflator, the price of the domestically produced good and the price of the export good, respectively; and, Y , D , and X are total output, output of the domestically produced good, and the output of the exported good (all in real terms), respectively.

Dividing (4) by Y and denoting the share of exports as S_x , yields:

$$p_y - p_x S_x = p_d D / Y = p_d (Y - X) / Y \quad (5)$$

Rearranging (5) yields:

$$p_d = (p_y - S_x p_x) / (1 - S_x) \quad (6)$$

Then, $IRER_2$ can then be calculated using the standard definition (P_{NT}/P_T), and using import prices as a proxy for the price of tradable goods:

$$IRER_2 = [(p_y - S_x p_x) / (1 - S_x)] / P_T \quad (7)$$

IV. THE BANKING SECTOR IN THE CENTRAL AFRICAN ECONOMIC AND MONETARY COMMUNITY (CEMAC) REGION: ISSUES AND DEVELOPMENTAL CHALLENGES⁵⁷

A. Introduction

87. **A well-functioning financial sector is a key ingredient to economic growth and poverty reduction.**⁵⁸ In the CEMAC, the banking sector dominates the financial system, but it remains small and shallow, even compared to banking systems in other sub-Saharan countries. The non-bank financial system, most notably microfinance institutions (MFIs), has gained ground over the recent past, but has not yet gained macroeconomic significance. The absence of deep and liquid inter-bank markets may also prevent CEMAC member countries from reaping the full benefits of their monetary union.⁵⁹

88. **The purpose of the paper is to examine in greater detail the state and the developmental challenges of the banking sector in the CEMAC region.** It is organized as follows: Section B describes the structure and operational environment of the banking and microfinance sectors; Section C examines the depth and functioning of regional financial markets; Section D discusses banking sector supervision in the region and recent regulatory changes; and Section E summarizes the main policy implications and discusses the challenges for financial development and further regional integration.

Box 1. Institutional Arrangements in the CEMAC

On December 8, 1964, Cameroon, Central African Republic, Chad, the Republic of Congo, and Gabon signed an agreement creating the Central African Customs and Economic Union (UDEAC), replacing the Equatorial Customs Unions (“l’Union Douanière Equatoriale”), created on June 23, 1959. Equatorial Guinea joined the UDEAC in January 1992. On November 22, 1972, these same states signed a convention establishing monetary cooperation among themselves and creating the regional central bank BEAC (Banque des États de l’Afrique Centrale). The regional banking supervision commission COBAC (Commission Bancaire de l’Afrique centrale) was subsequently established on October 16, 1990. On January 17, 1992, a convention was signed, establishing the harmonization of their banking regulations. Although legally independent, COBAC is closely related to the BEAC, whose governor is also the chair of COBAC, and depends on the BEAC for its financial and human resources. On March 16, 1996, through a treaty, CEMAC replaced UDEAC.

⁵⁷ Prepared by Jakob Christensen and Felix Fischer.

⁵⁸ See Holden and Prokopenko (2001) for a review of the literature on the links between financial sector growth, economic growth, and poverty reduction. See also Levine et al. (2000) for an econometric analysis showing the positive link between financial intermediation and growth. The study also confirms that legal and accounting reforms that strengthen creditor rights, contract enforcement, and accounting practices can boost financial development and accelerate growth.

⁵⁹ See Box 1 for a description of the institutional arrangements in the CEMAC.

B. Structure and Operational Environment for the Banking and Microfinance Sectors

The commercial banking system

Size, depth, and competition

89. **Following a restructuring in the 1990s, the formal banking sector in the CEMAC region now consists of 33 banks.** Ten banks are located in Cameroon, three in Central African Republic, four in the Republic of Congo, six in Gabon, three in Equatorial Guinea, and seven in Chad (Table 1). Foreign banks dominate the banking system with three-fourths of all banks having majority foreign ownership and almost all banks having at least 20 percent of foreign participation. Today's structure and ownership reflect changes implemented after a series of bank failures in the late 1980s and early 1990s. At the time, several banks were restructured and government ownership was reduced, while foreign ownership increased. Public involvement in the banking sector is, however, still important: one-third of all banks in the CEMAC region, accounting for almost half of the assets of the banking sector, have state ownership of at least 20 percent.

Table 1. CEMAC: Ownership Structure of the Banking Sector, December 2004

	Cameroon		Central Afr. Rep.		Congo		Gabon		Equatorial Guinea		Chad		CEMAC	
	Number	In percent of total assets	Number	In percent of total assets	Number	In percent of total assets	Number	In percent of total assets	Number	In percent of total assets	Number	In percent of total assets	Number	In percent of total assets
Number of banks	10	100	3	100	4	100	6	100	3	100	7	100	33	100
Banks with majority ownership														
State	0	0	0	0	1	21	1	6	0	0	0	0	2	3
Private domestic	4	25	0	0	0	0	1	29	0	0	0	0	5	21
Private foreign	6	75	3	100	3	79	4	65	3	100	7	100	26	76
Subsidiaries	5	71	3	100	3	79	3	52	3	100	7	100	24	71
Branches	1	4	0	0	0	0	1	13	0	0	0	0	2	6
Banks with significant state ownership 1/	2	37	1	29	1	21	3	57	1	49	2	43	11	43
Banks with significant foreign ownership 1/	7	85	3	100	3	79	6	100	3	100	7	100	29	91

Source: COBAC.

1/ More than 20 percent

90. **Financial development appears to be more limited in the CEMAC than in other African countries** (Table 2). Regional broad money accounts for only 16 percent of the regional GDP compared with 26 percent in the WAEMU area and almost 50 percent for sub-Saharan Africa (SSA) as a whole. Furthermore, while financial depth has been increasing in SSA and the WAEMU area in recent years, it has remained stagnant in the CEMAC region for almost a decade, despite strong economic growth and stable macroeconomic conditions.

Table 2: Comparative Indicators of Financial Sector Development 1/

	CEMAC Countries											
	Cameroon	Chad	Equatorial Guinea	Gabon	Congo	CAR	CEMAC	WAEMU	Nigeria	Kenya	South Africa	SSA
In percent of GDP (unless otherwise indicated)												
Macroeconomic figures (average of 2002-04)												
GDP (current US\$ billion)	5.3	17.0	15.5	1.4	3.4	-1.9	8.2	3.1	5.4	1.6	2.7	3.7
Real GDP growth (percent)	889	385	1439	5648	1135	398	934	549	322	333	3118	740
GDP per capita (in constant 1995 USD)	10.7	18.5	87.6	41.9	50.7	0.0	30.9	0.0	43.7	0.0	0.0	...
Size of oil sector	2.6	-0.5	8.1	1.4	2.1	2.4	3.0	1.8	14.6	6.6	5.9	10.4
Inflation (percent)	1.8	-4.6	21.4	6.4	-0.9	-1.8	3.8	-2.1	0.3	-3.2	-2.1	-2.8
Government balances (including grants)												
Financial Depth												
M2 to GDP	16.9	11.8	8.8	17.8	14.9	15.7	15.9	26.4	31.7	37.2	66.6	47.3
to non-oil GDP	18.8	19.4	85.7	31.2	28.9	15.7	27.4	26.4	56.4	37.2	66.6	...
Deposits in banks to M2 (percent)	76.6	41.6	77.9	78.8	49.7	26.2	70.0	78.6	67.4	85.5	95.0	74.5
Term to demand deposits (percent)	125.3	20.3	29.4	109.5	50.1	76.4	97.9	97.6	128.1	209.2	126.3	151.9
Money multiplier (ratio) 2/	2.2	1.2	1.4	2.6	1.9	1.3	2.1	2.8	2.1	4.5	11.5	3.4
Financial Intermediation by Deposit Money Banks												
Number of client accounts (in percent of total population) 2/	3.7	0.4	2.7	16.0	2.7	0.8	3.0	...	...	...	...	...
Deposits in banks to GDP	12.9	4.6	6.8	14.0	7.4	4.1	11.3	15.4	21.4	34.3	59.4	21.7
to non-oil GDP	14.4	7.6	66.7	24.6	14.4	4.1	19.5	15.4	38.0	34.3	59.4	...
Credit to the private sector to GDP	8.8	4.3	2.6	8.9	3.3	7.1	7.4	14.8	18.9	19.7	82.7	12.9
to non-oil GDP	9.8	7.8	25.7	15.6	6.3	7.1	11.6	14.8	33.6	19.7	82.7	...
Credit to public enterprises	0.9	1.9	0.0	0.43	0.5	1.0	0.8	...	...	0.6	...	1.0
Net credit to general governments	0.0	-0.8	-1.3	0.6	0.5	0.0	0.1	-2.1	5.1	11.9	1.0	5.5
Credit to private sector relative to total deposits (in percent)	68.1	93.0	38.5	63.6	43.9	171.9	67.7	82.4	90.0	63.2	136.6	70.1
Excess reserves (in percent of broad money)	17.4	14.3	57.2	14.5	13.9	0.5	18.4	6.4	1.8	0.1	0.0	...
Bank concentration index 3/	1503	1940	4116	2597	2605	3394	2155	...	600	1289	876	...
Real deposit rate (in percent)	4.7	10.4	0.8	4.5	3.6	7.1	5.2	3.5	-1.3	-9.2	4.5	0.8
Real lending rate (in percent)	17.7	23.4	13.8	17.5	16.6	20.1	18.2	...	4.2	0.9	9.9	13.7
Interest rate spread (in percent)	13.0	13.0	13.0	13.0	13.0	13.0	13.0	...	5.5	10.1	5.4	12.9

Source: BEAC and IMF staff estimates

1/ Latest available information, unless otherwise stated.

2/ Broad money over reserve money.

3/ Herfindahl-Hirschman (HH) index is a standard measure of concentration in an industry. A HH index < 1000 implies that a market is unconcentrated.

However, in proportion to non-oil GDP, broad money amounts to 27 percent; hence, it is similar to that in the WAEMU region, but still much lower than the SSA average.⁶⁰

91. **Bank competition in most member countries is weak because of the relatively small number of banks.** The Herfindahl-Hirschman (HH) concentration indices in the Central African Republic, Congo, Equatorial Guinea, and Gabon exceeds 2000, suggesting that the market structure of the banking sector in these countries is highly oligopolistic (Table 2). The banking sectors in Cameroon and Chad appear to be more competitive according to the HH index, which is somewhat smaller, albeit larger than the benchmark for a competitive market of 1000.

Access to formal financial savings facilities

92. **Formal financial services are available only to a small segment of the population.** In terms of membership accounts, only 3 percent of the CEMAC population, on average, has an account in a commercial bank, with the exception of Gabon, where 16 percent of the population holds a bank account. Deposits amount to only 11 percent of the region's GDP, although the ratio of deposits to non-oil GDP, at 19 percent, is closer to the African average.

93. **The limited role of the banking system is evident in the small portion of the money supply that is held as deposits in commercial banks.** Whereas bank deposits account for about three-fourths of the money supply, on average, in SSA and almost 100 percent in Kenya and South Africa, less than two-thirds of the money supply is intermediated through the banking system in the CEMAC region. Hence, a relatively large portion of the region's money supply is held as currency outside the formal banking system.

94. **The majority of deposits are demand deposits.** The proportion of demand deposits to total deposits is much larger in the CEMAC region than in other SSA countries, indicating a lack of confidence in the banking system.

95. **The limited access to savings accounts at commercial banks may be related to the interest rate floor imposed by the central bank.** Given the low levels of inflation, and in some cases even deflation, in the member countries, the nominal minimum interest rate of 5 percent on savings deposits translates into high real interest rates, ranging from 1 percent in Equatorial Guinea to 10½ percent in Chad. In view of the large real interest rates and large amount of excess liquidity, commercial banks are reluctant to accept additional deposits, thereby restricting the access of potential new depositors.

⁶⁰ Private oil companies only rely on the domestic banking system to a limited extent. However, given that their production is included in GDP, measures of financial development that are standardized by GDP tend to be lower than in non-oil exporting developing countries. Therefore, in the analysis below, ratios to non-oil GDP are used for comparison with other non-oil producing countries.

Credit to the private sector

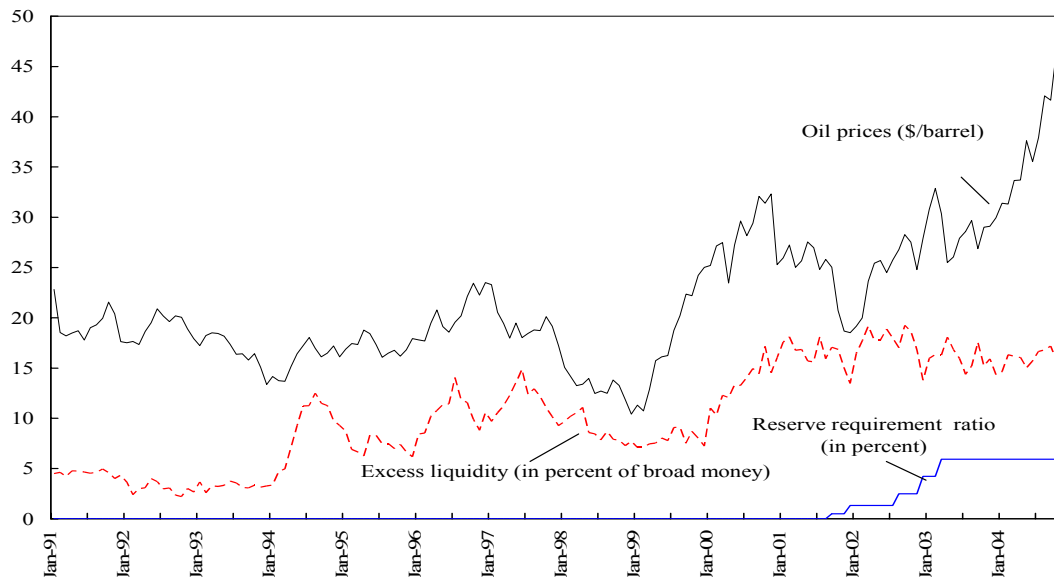
96. **Credit extension to the private sector is among the lowest in SSA and far lower than in countries with similar income levels.** While lending relative to GDP amounts to almost 13 percent in the average African country and 15 percent in the WAEMU region, lending in CEMAC countries averages only about 7 percent. Even relative to non-oil GDP, private sector credit is smaller than in other African countries. Furthermore, the banking sector in the CEMAC region extends a much smaller share of its deposits to the private sector than other African countries.

97. **Loans to the private sector are mainly short term and trade-related and target large enterprises.** More than two-thirds of bank lending to the private sector in the CEMAC region at end-2004 was short term, partly reflecting the dominance of demand vis-à-vis term deposits. Banks, especially foreign ones, finance primarily the current operations of large corporations and trade operators as opposed to investment projects. With banks becoming more aware of credit risks since the bank restructuring, they have cut back on lending to riskier small and medium-sized enterprises (SMEs). As a result, bank portfolios have become increasingly concentrated in large enterprises. By end-2004, two-thirds of the region's banks, controlling 55 percent of deposits, violated the single large exposure limit, representing an increase of 7.3 percentage points in terms of deposits compared with 2002.

98. **Private sector lending has not been “crowded in” by the significant improvement in government fiscal positions in recent years.** Following the surge in oil prices, the average fiscal balances (including grants) of the CEMAC countries increased to a surplus of 1.7 percent of GDP on average over the past five years from a deficit of 4 percent of GDP in the 1990s. As a result, commercial banks in the CEMAC countries have become net debtors to governments in stark contrast to the situation in other African countries, where net credit from commercial banks averages 5 percent of GDP. Gross loans to public enterprises amount to about 1 percent of the region's GDP, which is about the same as in other African countries.⁶¹ Given the weak response of private sector lending, commercial banks' liquidity in excess of the legal reserve requirement gradually rose from 7 percent to 20 percent of broad money between 1999 and 2004 (Figure 1).

Figure 1. CEMAC: Excess Liquidity and Reserve Requirement, 1991–2004

⁶¹ Private sector lending in the CEMAC region may be limited because its member countries have smaller private sectors than other African countries. However, the lack of data, particularly on public enterprises, hinders a careful assessment of this issue. One can approximate CEMAC's private sector lending by comparing its ratio of total expenditures (excluding interest payments) to GDP. According to this measure (which ranges from 11 percent of GDP in the Central African Republic to 21 percent of GDP in Equatorial Guinea), the public sectors of CEMAC countries are actually smaller than the average of 22 percent of GDP for sub-Saharan Africa.



Source: BEAC and IMF staff estimates

99. **Lending to the private sector appears to be constrained by structural problems and the nature of bank liabilities.** First, given the relative importance of demand relative to term deposits, banks are vulnerable to sudden deposit withdrawals and therefore need to have a relatively high level of liquidity. Second, government deposits in commercial banks, which amount to about 1½ percent of GDP (comparable to those in other African countries), are much more volatile than in other African countries, reflecting the impact of oil price fluctuations.⁶² Furthermore, banks are reluctant to extend credit to the private sector, especially to SMEs, because of the following structural impediments:

- *Improper accounting and bookkeeping practices in the corporate sector.* A disclosure index (see Section III) measuring the degree to which financial and ownership information is available to banks suggests that CEMAC countries fare much worse than other African and OECD countries.
- *A weak legal systems,* resulting from inadequate resources, the absence of well-functioning commercial courts, and a lack of clarity about the status of collateral. The settlements of disputes on the collection of collateral are reported to take up to 10 years. Moreover, the average time for enforcing contracts ranges from one and a half years in Chad to two years in Central African Republic, compared with little more than a year on average in SSA and half a year in the OECD countries. As a result, banks experience significant problems in enforcing mortgage lending.

⁶² For example, after the oil price plummeted to \$10 per barrel in 1997, government deposits in the banking system dropped to 1 percent of GDP in 1997 from an average of 2.5 percent of GDP in the early 1990s.

- *Expensive and cumbersome registration of collateral.* It is very expensive for investors to create and register collateral, with the average cost amounting to 76 percent of per capita income in the CEMAC countries, almost double the sub-Saharan average.

Financial performance of the banking system

100. **Since a string of banking crises in the late 1980s and early 1990s, the health of the banking sector has improved significantly.** Following external shocks and inappropriate macroeconomic policies, the banking sectors of many of the CEMAC countries were insolvent on the eve of the 50 percent devaluation of the CFA franc in 1994. Subsequent restructuring and consolidation of the banking system was completed by early 2001 in almost all member countries, and the prudential regulatory framework and institutions were strengthened significantly in the early 2000s.

101. **Despite a general strengthening of banking sector soundness indicators in recent years, the banking sector remains fragile** (Table 3). After a sharp drop in the early 2000s, the amount of nonperforming loans (NPLs) has increased slightly in recent years and remains very high in the international context. Furthermore, since 2002, provisions against NPLs have declined from 82.2 percent to 78.5 percent. However, the capital adequacy ratio of the banking system has been steadily improving in recent years, reaching a comfortable level of almost 12 percent, although there are significant differences among countries, ranging from about 6 percent in the Republic of Congo to 16½ percent in Gabon. Although, the overall capital adequacy ratio is comfortable, 9 of the 33 banks in the CEMAC region did not meet the minimum capital adequacy ratio of 8 percent in January 2005. Furthermore, if banks were penalized for breaching prudential requirements, two-thirds of them would breach the capital requirements.

102. **The profitability of banks differs widely among member countries.** Consistent with the high country risk, the average return on equity in Cameroonian banks is high (18.8 percent). In contrast, the return on equity is very low in the Central African Republic (4.7 percent) and Gabon (5.8 percent), even compared with the SSA average of 15 percent. The return on assets is low in all three countries, with only Cameroon performing at least on the level of low-risk countries (1.4 percent).

Table 3: CEMAC: Financial sector soundness indicators

Countries	Cameroon	Chad	Equatorial Guinea	Gabon	Congo	Central African Republic	CEMAC
Financial Soundness Indicators							
Capital adequacy ratio 1/	9.4	9.8	14.8	16.6	5.7	11.6	11.9
Nonperforming loans to total loans 1/	13.9	20.3	14.2	17.5	7.5	35.7	15.7
Provisions to nonperforming loans 1/	83.4	63.8	63.6	74.0	28.5	75.6	75.7
Return on assets 2/	1.4	...	...	0.7	...	0.6	...
Return on equity 2/	18.8	...	...	5.8	...	4.7	...
COBAC's Bank Ratings 3/							
	Number of banks						
Strong	1	0	0	1	0	1	2
Good	7	2	2	4	2	0	16
Fragile	0	1	0	0	0	0	4
Moderately fragile	1	1	0	0	1	1	4
Highly fragile	0	1	0	0	0	0	1
Critical	0	0	0	0	0	0	0
Highly critical	1	0	0	0	1	1	3
Not Rated	0	1	1	1	0	0	3
Total	10	6	3	6	4	3	33

Sources: COBAC and Bankscope

1/ As of January 2005 (COBAC)

2/ As of December 2003 (Bankscope)

3/ As of September 2004 (COBAC)

103. **COBAC's internal rating also signals the fragility of the banking system and disparities in the performance between banks in different countries.**⁶³ In January 2005, COBAC considered only 2 of 30 rated banks to be “strong,” another 16 “good,” 9 banks “fragile” and 3 “critical”. The rating system highlights the significant weaknesses in the banking systems of the Central African Republic, Chad, and the Republic of Congo, where between one-half and three-fourths of the rated banks were considered to be either fragile or in a critical state.

The microfinance system

104. **CEMAC's ministerial committee introduced microfinance regulations in April 2002.**⁶⁴ By the end of 2003, 1,010 MFIs had submitted licensing applications to COBAC, of which 45 were rejected and had to be liquidated (23 in Cameroon and 22 in Congo) and 360 received favorable ratings in the first instance. The remaining applications

⁶³ In 2000, COBAC introduced a CAMEL rating system for commercial banks, under which the Sysco rating, a bank's capital counts for 30 percent, the quality of its portfolio for 20 percent, the quality of management and internal control for 20 percent, earnings for 10 percent, and liquidity for 20 percent. Banks are consequently divided, by rating, into four groups. A rating of one stands for solid banks; a two rating for banks with a good financial situation; three for fragile banks; and four for banks that are in a critical state.

⁶⁴ See Section C for a discussion on the new regulatory framework for microfinance.

are still under consideration. Attention is now being given to improving both the regulatory framework and the performance of the previously informal microfinance system.

105. Although the microfinance sector has expanded in recent years, its expansion has been uneven and the size of its operations remains only a fraction of the commercial bank sectors. Between 2001 and 2003, deposits of MFIs grew by more than 40 percent to CFAF 75 billion, while credits grew by 43 percent to CFAF 42 billion (Table 4). The microfinance sector is most developed in Cameroon, where two-thirds of all MFIs in CEMAC are found, while remaining small in Equatorial Guinea and Gabon. While the MFIs are numerous, their scale of operations remains small; the deposits and loans of MFIs relative to those of commercial banks amounted to only 3 percent and 2½ percent, respectively, in 2003, except in the Republic of Congo, where deposits of MFIs totaled 18 percent of deposits in the banking system.

106. Evaluation missions by COBAC have revealed that, with some exceptions, the financial performance of the MFIs is weak and volatile.⁶⁵ For example, the evaluation team in Congo concluded that almost all MFIs had weak procedures for approving loans, did not coordinate meetings of different departments involved in the decision making, and often had no internal control mechanism, even though such mechanisms were envisaged in the MFIs' founding documents. Many MFIs had serious deficiencies in accounting; for example, the MFIs' financial, commercial, and service activities all had different accounting practices. Finally, the majority of MFIs were financially unviable, with their capital falling short of the MFIs' statutory requirements: in some cases, capital was CFAF 200,000, against CFA 20 million in deposits. Several MFIs that are supported by foreign partners rely on subsidies.

Table 4. CEMAC: Evolution of Microfinance Institutions between 2001 and 2003.

⁶⁵ Since the application of regulations for microfinance adopted in April 2002, COBAC has conducted three evaluation missions to assess the active MFIs in Congo (February-June 2003), Central African Republic (March-May 2004), and Chad (November 2004-February 2005). Similar evaluation missions will be conducted in Cameroon, Gabon, and Equatorial Guinea starting in March 2005. Furthermore, each member state has set up a professional association for MFIs and a department for microfinance issues within the ministry of finance.

	Number of MFIs		Deposits			Loans		
	2001	2003	In millions of CFA		In percent of deposits of banking system	In millions of CFA		In percent of loans of banking system
			2001	2003	2003	2001	2003	2003
Cameroon	652	657	35,790	41,600	3.6	25,260	29,700	3.4
Central African Republic	43	36	2,280	2,320	7.6	650	860	1.6
Chad	128	215	640	3,283	3.3	1,390	3,766	3.6
Congo	69	86	15,010	28,100	18.5	2,080	7,900	8.6
Equatorial Guinea	2	2	-	-	-	-	-	-
Gabon	14	14	40	40	0.0	50	50	0.0
Total	908	1,010	53,760	75,343	3.6	29,430	42,276	2.5

Source: COBAC.

Regional Money and Financial Markets

107. **Regional financial markets are shallow and highly segmented.** The volume traded on the money market amounted to 3 percent of broad money in 2004, mostly within individual countries. The lack of inter-bank market activity is related partly to the large amount of excess liquidity in the banking system (overall, five member countries had excess liquidity at end-2004, amounting to about 20 percent of the region's broad money (Figure 1)). The low volume also reflects the lack of securities for collateralized lending. Finally, insufficient information on banks' performance makes it difficult to assess counterpart risk in the inter-bank market.

108. **The BEAC uses a combination of quasi-direct monetary instruments to manage liquidity in the zone.** It has traditionally relied on its discount window, through which it has absorbed liquidity from and injected funds to the banking system. In response to a sharp rise in excess liquidity, the central bank introduced reserve requirements in 1999, raising them gradually to 5.75 and 7.75 percent for savings and demand deposits, respectively, in countries with highly liquid banking sectors (Cameroon, Equatorial Guinea, and Gabon) and to 3 and 5 percent for savings and demand deposits in countries with tighter liquidity conditions (Chad, Central African Republic, and Congo).

109. **Longer-term market-based instruments would help the central bank to steer liquidity.** Plans to introduce such instruments exist, but—in spite of the BEAC's successful preparatory work—the introduction of treasury bills has been delayed until further notice because member countries have been concerned about borrowing costs and technical constraints. As an interim and second-best solution, the BEAC uses short-term deposits and differentiated reserve requirements to sterilize the high level of banks' free liquidity.

Meanwhile, the BEAC is also reviewing the option of issuing tradable central bank bills, at least as an interim solution, subject to the need to maintain its overall profitability.

110. The planned completion by 2006 of BEAC's payment and settlement systems reform is expected to deepen the financial sector and economic integration in the region (see also Box 2). The new payment system should improve the speed and security of the payment system and improve the access to banking services to a larger basis of the population, and particularly to those with low income. The BEAC expects access to banking services to increase from 3 percent to 8-10 percent of the population within four years. Furthermore, the more modern payment and settlement system should also facilitate the conduct of monetary policy.

Box 2. Components of the Payment and Settlement Systems Reform Project.

The reform project of payment and settlement systems strikes a balance between security, efficiency, and risk management. The project contains the following elements:

- A regional real time gross settlement system (RTGS) for the settlement of large amounts of money (Système de Gros Montants Automatisé—SYGMA): Large amounts need to be settled one by one in order to avoid that the payment default by one actor creates a systemic crisis affecting the entire financial system.
- A national and regional electronic inter-bank settlement system for small amounts (Compensation Interbancaire Régionale—CIR); Gross settlement of small amounts would be too costly and time consuming. Instead, net amounts are periodically settled between participants of the payment system. To guarantee the smooth functioning of the system, participants must have enough funds and access to credit lines to honor their payment obligations.
- A monetary inter-bank strategy, including the creation of a monetary inter-bank system (système monétique interbancaire—SMI). The SMI will contain a supervisory body (Office Monétique de l'Afrique Centrale—OMAC) and two technical backup platforms.
- A risk-prevention and management system in order to exclude offenders from their future participation in the system (Centrale des Incidents de Paiement—CIP).

C. Recent Legal and Regulatory Changes.

111. In response to comprehensive assessments of the regulatory and supervisory framework, the authorities have recently initiated a series of reforms. FSAPs for Cameroon and Gabon were conducted in 2000 and 2002, respectively. They found that the banking sector had generally strengthened in past years, but that banks were vulnerable to shocks, especially a deterioration in fiscal balances. Given a relatively low capital base, banks would be exposed to credit risk following an increase in nonperforming loans. Furthermore, banks also faced significant liquidity risk in light of the large amounts of illiquid government debt without corresponding long-term liabilities. The FSAPs called for improvements in the operating environment for banks, especially for legal and judicial reforms, implementation of a new payment system, and a streamlining of business laws across the region. Finally, the FSAP for Cameroon concluded that, given the large number of depositors, the microfinance sector needed an appropriate regulatory framework.

The commercial banking sector

112. **The authorities hope that new licensing and uniform accounting rules and an active regional stock market will help promote financial integration and competition in the financial sector.** Intraregional financial integration is facilitated by the single registration procedure (*agrément unique*, adopted in July 2001) for banks in the CEMAC region. This rule allows banks operating in one member country to open branches in another member country of the same monetary union and, hence, increase bank competition in the country. Furthermore, the integration of the accounting and financial publication code of the Organization for the Harmonization of African Business Law (OHADA) into the banking regulation in February 2003 should make it easier for banks to open and operate in CEMAC member countries. Access of the corporate sector to finance through the stock market should help increase competition in the financial sector and should ultimately reduce interest rate spreads. To ensure smooth operations of the planned regional stock market, COBAC has issued regulations clarifying accounting practices and the prudential treatment of stock market operations.

113. **New regulations have also been adopted to strengthen the capital base and foster public confidence in the banking system.** To make banks more resilient to unexpected losses, COBAC increased the minimum risk-weighted capital adequacy ratio from 5 percent in 2002 to 8 percent at the beginning of 2005.⁶⁶ Public confidence in the banking system would be further bolstered by a new regulation requiring financial institutions to put in place internal risk-management systems and to carry out internal and external audits to properly measure, supervise, report, and manage risks.

114. **The creation of a deposit guarantee fund is likely to encourage financial deepening.** In January 2004, the CEMAC regulation for creating the Central African Deposit Insurance Fund (*Fonds de Garantie des Dépôts en Afrique Centrale—FOGADAC*) was adopted. COBAC is in the process of defining the modalities of the deposit guarantee system, which could encourage potential clients to open deposit accounts and increase the share of longer-term deposits in the system.

The microfinance sector

115. **In 2002, a regulatory framework and prudential norms for MFIs were adopted to strengthen the performance of the sector.** These new regulations and norms seek to identify the number of MFIs, their nature, and financial condition, and to develop an appropriate regulatory framework. The purpose of the framework would be to define closely the scope of permissible activities for credit cooperatives, essentially ensuring that they limit their size and activities to agreed-upon parameters and operate within a network structure.

⁶⁶ COBAC indicated that current shareholders of banks were not willing to inject new capital into them. Given the absence of capital markets, further capital increases need to be made at the rhythm of retained profits. The Basel Accord recommends a minimum of 12 percent for countries with a higher risk profile.

The framework consists of the CEMAC regulations and 21 prudential norms issued by COBAC. The CEMAC regulations came into force in April 2005, while the COBAC regulations will become effective in April 2007. The regulations have the following main elements:

- All MFIs need to hold a valid license. They are grouped into three categories: (i) MFIs taking deposits from and lending exclusively to its members; (ii) MFIs taking deposits from and lending to third parties; and (iii) MFIs lending only to third parties without accepting deposits.
- MFIs are authorized to operate only in the country in which they are registered. They must also join the professional association of MFIs in their respective countries. Their participation in the professional association would ensure dissemination of best practices and allow for targeted lobbying vis-à-vis the local and regional authorities.
- COBAC will be responsible for regulating and sanctioning MFIs, including for borrowing conditions, norms for internal management, liquidity, capital adequacy, and connected lending. Enforcement of the regulation is expected to limit abuse and strengthen the credibility of the system.

116. **Prudential regulations vary for different categories of MFIs and are designed to account for the generally higher level of risk to which the institutions are exposed** (Table 5). The different prudential norms for different types of MFIs reflect their different exposure vis-à-vis third parties. The regulations are tighter for MFIs in the second and third category, which on-lend to third parties, than for MFIs in the first category, where members can obtain loans only if they have deposits in the institution. Categories 2 and 3 are required to have higher minimum capital and lower concentrated exposures. The prudential norms are generally stricter for MFIs than for commercial banks, given the higher level of operational risks associated with microfinance clients, including their weaker accounting and audit practices. For example, MFIs are required to have a higher capital adequacy ratio, smaller single large exposure ratios, and faster provisioning for nonperforming loans.

Table 5. Comparison of Prudential Regulations for MFIs and Commercial Banks.

Criteria	MFI regulations	Banking regulations	Comments
Minimum capital (in million CFA)	First category: none Second category: 50 Third category: 25	Cameroon, Gabon: 1,000 Equatorial Guinea: 300 Central African Republic: 200 Republic of Congo: 150	
Capital adequacy ratio	10 percent of assets	8 percent of risk weighted assets	For MFI assets are not risk weighted.
Single large exposure	First category: 15 Second and third category: 25 percent of capital.	45 percent of capital	
Total of large exposures	First category: unlimited Second and third category: 800 percent of capital	800 percent of capital	Definition of large exposure is >10 percent of capital for MFI and 15 percent for banks.
Fixed assets coverage	Minimum 100 percent with capital and other permanent resources.	Minimum 100 percent with capital and bonds	For banks and MFI, bonds need to have a minimum initial maturity of 5 years. For MFI, bonds cannot exceed 50 percent of capital.
Connected lending	First category: 30 percent of capital Second and third category: 20 percent of capital	5 percent of capital	
Liquidity	100 percent	100 percent	For MFI: liquidity includes performing loans with remaining maturity of 3 months. For banks: assets (including loans) over liabilities with remaining maturities of one month.
Transformation coefficients	Capital to financing other than deposits has to be at least 50 percent.	Long term assets have to be financed by at least 50 percent of long term liabilities (remaining maturity of more than 5 years)	
Provisioning	Uncollateralized loans: 100 percent upon first payment default. Mortgage loans: 15, 45, 75 and 100 percent in first, second, third and fourth year respectively. Loans with real guarantees or personal guarantees: 100 percent within one year.	Uncollateralized and not guaranteed loans: 25, 75 and 100 percent in the first, second and third year respectively. Collateralized or guaranteed loans: 15, 45, 75 and 100 percent in the first, second, third and fourth year respectively.	

Sources: COBAC regulations.

D. Challenges for Financial Sector Development and Further Regional Market Integration

117. **The CEMAC region will need to maintain or strengthen efforts in the financial sector to achieve, at a minimum, the level of development reached elsewhere in the region.** Currently, the formal financial system plays only a limited role in ensuring broad-based economic growth and poverty reduction. The lacking market infrastructure also impedes the implementation of regional monetary policy and prevents gains from both further regional integration and financial deepening. Although reforms in several areas have been undertaken in recent years, full implementation and application across all member countries are needed in order to achieve a deeper and well-functioning financial system.

118. **A gradual move to more market-based monetary instruments would support financial integration and deepening in the CEMAC region.** The regional central bank's reliance on direct, nonmarket-based monetary instruments, such as reserve requirements, interest rate controls, and discretionary liquidity operations prevents the emergence of market-based transactions. The introduction of treasury or central bank bills would promote regional inter-bank market activity (by providing collateral for transactions) and develop a yield curve. Furthermore, bond market development would also reduce the need for reserve requirements, which currently impose an implicit tax on bank transactions because of the low remunerations.

119. **Greater interest-rate flexibility could result in broader access to financial services.** Banks are reluctant to accept further deposits at the current high minimum deposit rate, especially in view of the significant excess liquidity in the system. The interest-rate controls benefit insiders (those already having an account) at the expense of outsiders. Lifting the controls on deposit rates would lead to a lowering of bank deposit rates, encouraging banks to accept deposits from a wider range of customers. The maximum lending rate may also undermine the private sector's access to credit because banks may want to increase lending rates to higher-risk customers.

120. **Structural problems, especially in the legal sector, must be addressed in order to increase bank lending to the private sector.** While the recent regional initiatives, such as setting up a deposit guarantee fund and reforming the regional payment and settlement system, will support financial development, national efforts must focus on strengthening the judiciary sector and business environment. Examples include accounting and bookkeeping practices in the corporate sector, settlement of legal disputes on the collection of collateral, and the registration of collateral where surveys of local practices—including those conducted in connection with the FSAPs for Cameroon and Gabon—have identified particular problems.

121. **MFIs should be seen as complementing and not substituting for a formal financial sector.** Recent efforts to regulate the microfinance sector will help the sector develop in a balanced and sound way. However, the efforts devoted to microfinance—

including in the area of supervision and regulation—should be complementing efforts to provide a framework in which the formal financial sector can deepen.

Acronyms

BEAC	Regional Central Bank of Central Africa (Banque des États de l’Afrique centrale).
CAR	Capital adequacy ratio
CEMAC	Central African Economic and Monetary Community (Communauté Economique et Monétaire de l’Afrique centrale).
COBAC	Central African Banking Commission (Commission Bancaire de l’Afrique centrale).
CIP	Credit Bureau (for returned cheques) (Centrale des Incidents de Paiement)
CIR	Electronic interbank settlement system (Compensation Interbancaire Régionale)
FOGADAC	Central African Deposit Insurance Fund (Fonds de Garantie des Dépôts en Afrique Centrale)
FSAP	Financial Sector Assessment Program
HH	Herfindahl-Hirschman
MFI	Microfinance institutions
NPL	Nonperforming loans
OHADA	Organization for the Harmonization of African Business Law (Organisation pour l’harmonisation du droit des affaires en Afrique)
OMAC	Central African Monetary Office (Office Monétaire de l’Afrique Centrale)
RTGS	Real Time Gross Settlement System (Système de Gros Montants Automatisé—SYGMA)
SMI	Monetary Interbank System (Système Monétaire Interbancaire)
SSA	Sub-Saharan Africa
UDEAC	Central African Customs and Economic Union (Union Douanière des États de L’Afrique centrale).

References

- Alexander, William, Tomas Balino, and Charles Enoch, 1995, "The Adoption of Monetary Instruments of Monetary Policy," IMF Occasional Paper 126 (Washington: International Monetary Fund).
- Daumont, R, F. Le Gall, and F. Leroux, 2004, "Banking in Sub-Saharan Africa: What Went Wrong?" IMF Working Paper 04/55 (Washington: International Monetary Fund).
- Holden, Paul, and Vassili Prokopenko, 2001, *Financial Development and Poverty alleviation: Issues and Policy Implications for Developing and Transition Countries*, IMF Working Paper 01/160 (Washington: International Monetary Fund).
- International Monetary Fund, 2002, Cameroon—Financial System Stability Assessment, FO/DIS/00/66.
- Levine Ross, Norman Loayza, and Thorsten Beck, 2000, "Financial Intermediation and Growth: Causality and Causes," *Journal of Monetary Economics*, No 46, pp. 31–77.