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THE EFFECTIVENESS OF MONETARY POLICY IN COTE D'IVOIRE

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ODI working papers present in preliminary form work resulting from research undertaken under the auspices of the Institute. Views expressed are those of the authors and do not necessarily reflect the views of ODI or supporting institutions. Comments are welcomed and should be addressed directly to the authors or project leaders.

This working paper is one of seven country studies prepared as part of a study of the role of monetary policy in primary product dependent, low income countries. The objective of the general study is to examine what monetary policy can be expected to accomplish and what are the principal constraints upon its effectiveness. The country studies examine the development of monetary institutions, the determination of money supply and demand, and the objectives and experience of governments in implementing monetary policy in individual countries. Other case studies include China, Keyna, Bangladesh, and Indonesia. It is hoped that the final report will be published in 1991. The project is directed at ODI by Sheila Page. We are grateful for financial support from the Overseas Development Administration, the Rockefeller Foundation and the International Development Research Centre of Canada.

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Descriptive Glossary of Abbreviations

BCEAO	Banque Centrale des Etats de l'Afrique de l'Ouest (Central Bank of West African States)
BIAO-CI	Banque Internationale pour l'Afrique de l'Ouest
BICI-CI	Banque Internationale pour le Commerce et l'Industrie de la Côte d'Ivoire
CAA	Caisse Autonome d'Amortissement (Debt Amortisation Fund)
CFA	Franc Franc de la Communauté Financière Africaine (African Financial Community Franc)
CSSPPA	In Caisse de Stabilisation et des Soutien des Prix des Productions Agricoles (Agricultural Exports Stabilisation Fund)
ECU	European Currency Unit
EMS	European Monetary System
ERM	Exchange Rate Mechanism (of the EMS)
FNI	Fond National d'Investissement (National Investment Fund).
GDP	Gross Domestic Product
GNP	Gross National Product
PCDI	Parti Deomcratique de la Côte d'Ivoire
SGBCI	Société Générale de Banques en Côte d'Ivoire
SIB	Société Ivoirienne de Banque
TEN	Taux d'Escompte Normale (Ordinary Discount Rate)
TEP	Taux d'Escompte Préférentiel (Preferential Discount Rate)
UMOA	Union Monétaire Ouest-Africaine (West African Monetary Union)

1. INTRODUCTION

This working paper examines the effectiveness of monetary policy in controlling monetary aggregates and the impact of monetary policy upon the Ivorian economy, looking in particular at the impact and effectiveness of the existing array of monetary instruments available to the monetary authorities.

Monetary policy in Côte d'Ivoire operates in an institutional environment that in many respects restricts the range of policy options available to the monetary authorities. As the largest member of a regional monetary union, Côte d'Ivoire cannot set interest rates independently of other union members nor can it unilaterally change its exchange rate, which has remained pegged to the French Franc since 1948. The union also manages its foreign reserves collectively and controls credit expansion which influences the direction and magnitude of the monetary stance that individual countries may follow. This Working paper looks at the distinctive features of the operation of monetary policy with a fixed exchange rate and regional involvement in monetary policy decisions.

Côte d'Ivoire is a good example of policy continuity. Monetary policy instruments have remained virtually unchanged since 1973. The economic environment however, has altered from rapid export-based growth in the 1970s, to economic stagnation and prolonged adjustment to internal and external financial imbalances during the 1980s. Access to commercial foreign funds has been effectively cut since debt servicing arrears emerged in 1983. In this perspective, the decline in gross national savings to less than 10 per cent of GDP appears as a serious problem likely to restrict the growth of capital stock, particularly as private foreign investment has also dramatically slumped. Domestic monetary policy has therefore become more important than previously as a policy tool to increase the overall savings rate.

The organisation of the working paper is as follows: Section two surveys the financial system, assesses its recent development, and places the monetary union in context; section three analyses the scope and effectiveness of credit and interest rate policies which are the main forms of monetary management; section four considers the difficulties in managing money demand and supply; section five examines the real economy effects of monetary policy and the problems of inflexible exchange rates; section six briefly evaluates the impact of membership of a monetary union and is followed by concluding remarks upon the possibilities for and limitations of monetary policy in Côte d'Ivoire.

2. THE MONETARY SYSTEM IN IVORIAN DEVELOPMENT

Analysis of the effectiveness of monetary policy in Côte d'Ivoire (or elsewhere for that matter) should make allowance for the fact that monetary institutions cannot solve the diverse problems of underdevelopment alone. As Jakobeit (1985) aptly comments:

'they can only facilitate (or inhibit, as the case may be) the realisation of real processes, not engage them.'

Both political and economic factors have been instrumental in the rapid economic growth of Côte d'Ivoire from independence up to 1980:

* The political environment has remained stable; the PCDI (Parti Democratique de la Côte d'Ivoire) led by President Houphouet-Boigny has been continuously in power since achieving independence.

* A policy of encouraging the long standing pattern of immigration from neighbouring states has provided a low cost labour force in construction, agriculture and service sectors comprising about 25 per cent of the workforce.

* Buoyant or booming prices for coffee and cocoa exports until the late 1970s, coupled with a successful marketing and development policy for cash crops, have provided a large surplus for the expansion of the non-agricultural economy.

From 1980 onwards the economy has been in stagnation; monetary and fiscal policy were tightened to reduce the balance of payments and fiscal deficits which emerged as a result of rapid monetary expansion during and after the commodity boom.

The Ivorian Economy

The economy of Côte d'Ivoire is relatively open and characterised by a high level of dependence upon primary product exports. About 35 per cent of GDP is exported (for comparison, Bangladesh 6 per cent, China 13 per cent, Ghana 20 per cent, Indonesia 26 per cent and Kenya 21 per cent) of which 90 per cent is composed of non-fuel commodities, cocoa and coffee being the most important commodity exports. Exports are subject to considerable price instability which is reflected in sizeable income changes from year to year.

Côte d'Ivoire also had a rapidly growing government sector until 1980 (20-28 per cent of GDP) which contributed to a relatively rapid growth of services in GDP (see Table 1). Consequently, leaving factor productivity issues aside, the real and financial

position of the economy is primarily determined by the effective terms of trade and the fiscal stance of the public sector[1].

Table 1: Economic Growth in Côte d'Ivoire

Growth Rates (% per annum) from constant price data

	1965-73	1973-80	1980-87
Gross Domestic Product	8.5	7.0	2.2
Agriculture	4.9	3.3	1.6
Industry	12.5	11.7	-2.4
Services	11.2	6.5	4.2

Source: (World Bank, 1988:p xviii and World Bank, 1989 for 1980-87 data)

1960-80 Export-Led Growth

From independence in 1960 the Ivorian economy grew rapidly averaging real GDP growth of 8.5% pa between 1965-73 and 7.0% over the 1973-80 period. Agriculture, the dominant sector in the economy employing nearly three quarters of the labour force in 1973, grew at a slower rate (see Table 1) but was the basis for strong export growth particularly from cocoa and coffee production.

The agricultural sector, via the public price stabilisation fund (*Caisse de Stabilisation et de Soutien des Productions Agricoles*, CSSPPA) consistently provided financial surpluses of up to 15 per cent of GDP (Schiller, 1988:p3) which constituted a large proportion of government revenue. The expansion of public expenditure funded by the agricultural financial surplus (AFS) and from the mid-1970s by foreign commercial borrowing permitted rapid growth in import substituting industries, construction and tertiary sectors.

The 1975-78 period marked the apex of the country's economic success with a boom in coffee and cocoa prices improving the terms of trade by 80 per cent and leading to exceptionally rapid income growth. For example gross domestic income (at constant

[1] For summaries of the Ivoirian Economy see: Tuinder (1978) Ministère d'Economie et Finances (1988a), Duruflé (1989) Riddell (forthcoming 1990).

prices) rose by 14.5 per cent in 1976 and 12.7 per cent in 1977.

The 1980s - Prolonged Adjustment

By 1980, severe disequilibria were present in the Ivorian economy. Government borrowing had increased rapidly from 1976 to finance an ambitious investment programme in infrastructure and agroindustry with the consolidated government deficit reaching 12 per cent of GDP by 1980. The declining terms of trade from 1979 onwards contributed to a current account deficit equivalent to 17 per cent of GDP (1980) and debt service on nearly US$ 6 billion foreign debt accounted for nearly 25 per cent of export proceeds.

The 1980s have been marked by a period of prolonged economic stabilisation and adjustment, notably characterised by World Bank Structural Adjustment Lending programmes in 1981, 1983 and 1986. IMF financing of balance of payments imbalances has been almost continual since 1980 [2]. Severe drought and a contraction of government expenditure led to a deep recession during 1982-84, although temporarily buoyant commodity prices and a moratorium on the substantial accumulation of foreign debt improved the balance of payments and aided a considerable recovery in 1985 and 1986.

A steep fall in the terms of trade in 1987 precipitated a new recession and real income fell in 1987 and 1988. By 1989, the economy was in a critical position: international coffee and cocoa prices in local currency equivalent (CFA) remained at half the level prevalent in the 1985/6 season for the second successive year, and the government deficit had increased to over 10 per cent of GDP.

The Financial System

The development of the monetary system in Côte d'Ivoire and other former French territories in West Africa was based upon the extension of the French Franc as legal currency.

Soon after the abolition of slavery in 1848 private issuing banks (*banques d'emission*) were formed in response to plantation owners' newfound requirements for working capital. In 1901, the commercial *Banque de l'Afrique Occidentale* was formed which issued currency for all West African colonies and also the Congo (Kouamé, 1988:pp29-32). In 1955, the right of note issue was transferred to a publicly owned institution which became the *Banque Centrale des Etats de l'Afrique de L'Ouest* (BCEAO) in

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[2] Export Financing Facility 1981-83, Standby Arrangements 1984 and 1986. Standby 1988 approved but not disbursed following Côte d'Ivoire default on foreign debt repayments. Compensatory Financing Facility, 1988. Negotiations in 1989 for new Standby Arrangement of around SDR 150 million.

1959. French control of the colonial issuing banks allowed no territorial autonomy or decentralisation of decision making (Bortolani, 1975:p5)

Closely following political independence for French West African states the *Union Monetaire Ouest Africaine* (UMOA) was created in 1962 with Benin, Côte d'Ivoire, Upper Volta, Niger, Senegal and Mauritania as the founding member states. At this time, the BCEAO took on the usual responsibilities of a central bank such as reserve management, formulation of monetary policy, credit facilities to banks, governments and other financial institutions, although the bank itself was located in Paris with agencies in each member state (Bhatia,1985). French policy makers in the *Trésorie* and the *Banque de France* effectively had a power of veto in BCEAO decisions.

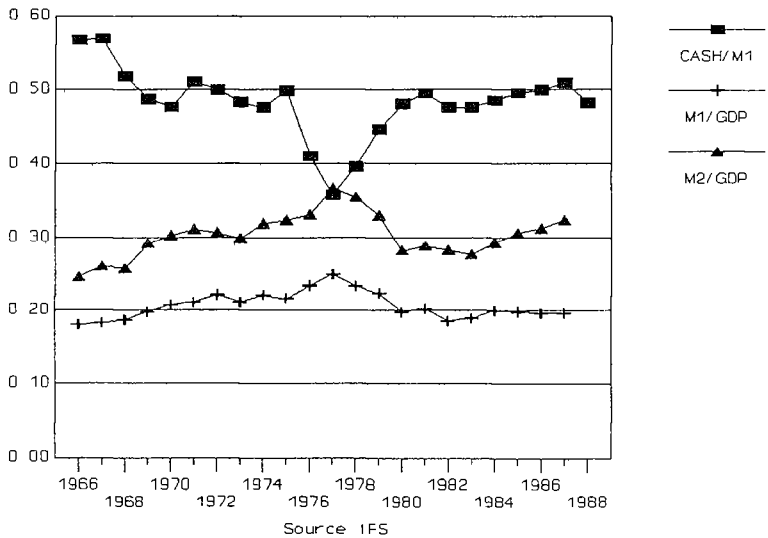
In 1973, UMOA constituent agreements were renegotiated with a strengthened role for the BCEAO whose headquarters were moved to Dakar, Senegal. France's representation in UMOA was restricted to two members of the central Board of Directors, the same as all UMOA member states.

In terms of monetisation of the economy, Côte d'Ivoire has generally been one of the most advanced countries in sub-Saharan Africa. Bortolani (1975) shows that in 1966-68 Côte d'Ivoire's M1/GDP ratio was 2nd highest of 30 selected sub-Saharan countries. The relatively early monetisation of the economy can be attributed to the importance of cash crop agriculture in the economy combined with the early incorporation of the indigenous rural population into production for exchange.

From independence until 1977 there was an increase in the 'banking habit' with a clearly decreasing ratio of cash to narrow money (from .60 to .36) and rising ratios of both broad and narrow money to GDP (see Figure 1), as well as a sizeable expansion in the number of banking offices. The peak levels of financial intermediation in the mid-1970s were, however, a reflection of the export commodity boom rather than a more developed financial system. Windfall income receipts temporarily increased savings and lowered the income velocity of money. So it was not surprising that levels of monetisation slipped back in the late 1970s post boom period. In the 1980s money to GDP ratios stayed fairly constant and this stability can be attributed to the relatively slow growth of income, money and prices as well as a period marked by little expansion, if any, of the banking sector.

Periods of financial deepening, proxied by increases in the broad money to GDP ratio, are generally associated with real income growth. This is evident from increases in the level of financial intermediation during rapid growth 1968-76, and falls in 1979 and 1980 as real GDP growth fell to 2.8 per cent and then -0.7 per cent. This conclusion is also supported by econometric evidence presented in section 4, which identifies an income elasticity of demand for money greater than one.

Figure 1: Indicators Of Financial Development



There is however, little evidence that monetary policy has positively encouraged financial deepening. The continuity of monetary policy, in terms of instruments and approaches, over the past two decades has implied a more supportive than innovative role. The subsequent discussion of the financial system indicates that although the economy has grown substantially, financial instruments outside the commercial banking sector have not been developed significantly.

Union Monetaire Ouest Africaine(UMOA)

Membership of the UMOA is the most important feature of the Ivorian financial system. It defines the unit of exchange, exchange relations with the rest of the world, money and banking legislation and the framework for monetary and credit policy. The three main features of the UMOA are:

* Common Monetary Area. All states in the UMOA belong to a common monetary area in which the CFA (*Communauté Financière Africaine*) Franc circulates freely as legal currency. Commercial banks or government are confined to the issue of notes bearing the letter of identification of the country in question. This ensures a distinct issue zone for each state in the union and allows a limited independent monetary policy at country level. Within the monetary union there

is harmonisation of banking and monetary legislation and centralisation of external reserve holdings with the BCEAO.

* Convertibility. An agreement between France and the member states of the UMOA assures free convertability of the CFA Franc by means of an operations account (*compte d'operations*) at the French treasury. The BCEAO is required to deposit not less than 65 per cent of its pooled foreign exchange reserves in French Francs on the operations account. Although there is no statutory limit on the overdraft level an individual UMOA member may have on the operations account, it is constrained by the degree of monetary control exercised by the BCEAO in each individual country.

* Fixed Rate of Exchange. The CFA Franc has a fixed rate of parity with the French Franc which, since 1948, has remained unchanged at 50 CFA to 1 French Franc. Exchange rates with other currencies are determined according to the market rate with the French Franc [3].

Objectives of UMOA Membership

The 1973 treaty[4] envisaged that regional monetary union would contribute to rapid economic development and simultaneously 'harmonise' the economies of member states, implying objectives of economic stabilisation and integration. The linkage with the French Franc was viewed as increasing the availability of financial resources for development (presumably via the operations account and through encouraging foreign capital flows) yet it also reflected a commitment to retain strong political and economic links within the Francophone community. The objectives of monetary and credit policy were to assure the value of the common currency and the ability to finance economic activity and development.

The creation of the West African Development Bank (BOAD) in 1973 signified an increased emphasis on a developmental role for the UMOA. BOAD, partly financed by the BCEAO, has concentrated on reducing regional economic disparities. The three largest recipients of investment being low-income Senegal, Benin and Burkina Faso. Côte d'Ivoire has received 12 per cent ($34 million) of total cumulative investment to date (BOAD,1988).

Organisation of the UMOA

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[3] The statutory arrangements are described in BCEAO 1973a, BCEAO 1973b and BCEAO 1973c.

[4] For a detailed discussion of the changed emphasis of the revised 1973 UMOA statutes see Bhatia (1985); Allechi (1989) reviews specific changes.

The highest authority in the UMOA is the inter-state Council of Heads of State followed by the Council of Ministers (2 from each state). These bodies by unanimous decision accept or exclude countries from the union and set the value of the CFA Franc.

The administration and management of Union wide monetary policy is carried out by the Board of Directors of the BCEAO (*Conseil d'Administration*) comprising two members from each state and two from France. Most importantly the *Conseil d'Administration* sets the amount of total assistance (*concours globale)* accorded by the BCEAO to member states each year, sets the discount rate and decides the appropriate policy changes to be made when BCEAO foreign assets falls below the 20 per cent coverage level.

Monetary policy in each UMOA country is implemented by a local BCEAO agency (country central bank) and is administered by a National Credit Committee (*Comité National du Crédit*). This committee, chaired by the Minister of Finance, decides the division of the credit allocation from the BCEAO (within the concours globale set by the Conseil d'Administration) and implements sectoral credit policy.

Importance of Côte d'Ivoire in the UMOA.

Côte d'Ivoire is by far the largest economy in the UMOA, with output more than twice that of the second largest economy, Senegal. In terms of monetary aggregates it comprises nearly 50 per cent of UMOA broad money, more than half of total domestic credit, and is the principal user of pooled UMOA reserves. More than 80 per cent of the official UMOA net foreign asset deficit of CFA 600 billion in 1987 was accounted for by Côte d'Ivoire alone[5]. Although all UMOA countries are equally represented in decision making bodies, the economic weight and indebtedness of Côte d'Ivoire arguably places it in a position of *primus inter pares*, but nonetheless its sovereignty in monetary policy formulation is considerably diminished.

The Commercial Banking System

Ivorian financial assets are predominantly held in commercial and savings banks, although the Central Bank has a sizeable role in the financial system. Table 2 highlights the extent of dependence upon the banking sector with over 90 per cent of 1987 financial assets held in the banking system[6]. Of other types of financial assets the holdings of bonds and equities are the most significant. The concentration of financial assets in the banking system is greater than in most developing countries where the

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[5] The Ivoirian foreign deficit has essentially two components, the overdraft at the compte d'operations and drawdowns of IMF borrowings.

[6] There is likely to be some double counting from commercial banks on-lending central bank loans.

average share financial assets held by the Central Bank is 20 per cent and deposit banks 48 per cent (for 1985)[7].

Table 2: Major Financial System Assets 1987
(CFA Billion)

Commercial and Savings Banks	1546.2	60.3 %
Central Bank a	802.5	31.3 %
Bonds	95.1	3.7 %
Equity	122.0	4.7 %
Mutual Funds, Unit Trusts	0.0	0.0 %
Total	2565.8	100.0 %

Notes: a Excludes some assets held by BCEAO not allocated by country.
Source: BCEAO, *Statistiques Economiques et Monétaires*; World Bank (1988).

We consider first the institutional basis and functioning of the major holders of financial assets in Côte d'Ivoire, the efficiency of intermediation and the ramifications for monetary policy implementation.

Commercial Banks

Table 3 shows the number of banking institutions has increased substantially from the immediate post independence period, notably from the entry of overseas banks and representative agencies (non-deposit taking) in the period following banking reforms in 1975. The structure of the banking system however remains rather less altered. Four commercial banks BIAO-CI, BICI-CI, SGBCI and SIB (see glossary of abbreviations for full titles) dominate commercial banking with nearly 95 per cent of total commercial bank assets and 69 per cent of total banking sector assets in 1987. Each of the "big four" has a parent French bank as the principal shareholder [8] with remaining holdings distributed mainly amongst other foreign banks and the Ivorian state. French parent banks typically supply credit lines to their counterpart Ivorian banks which can significantly supplement domestic lending resources particularly in situations of tight domestic liquidity.

[7] World Bank figures reproduced in *The Economist* 12/8/89.

[8] Parent: Ivoirian subsidiaries are as follows; BIAO: BIAO-CI, Banque Nationale de Paris: BICI-CI, Sociétè Generale:SGBCI, Credit Lyonnais:SIB.

Table 3: Growth of Banking and Financial System

Bank Type	1965	1973	1980	1987	% Total 1987 Assets
	Numbers In Place				
Commercial	3	5	9	10	70.6 %
Development-type [a]	3	4	6	4[b]	21.4 %
Overseas Incorporated	0	0	5	5	4.6 %
Representative Offices	0	0	7	7	-
Other Financial Institutions	2	3	11	13	3.5 %

a Including the Caisse Autonome d'Amortissement, CAA.
b Not including 2 liquidations, including 2 operations with frozen credit liquidated in 1989.
c Excluding 4 institutions with no published accounts.

Source: *Fichier Des Banques* (1988) and Banks Annual Reports (Various).

Development-type Banks

The legal distinction between development banks and commercial banks was abolished in 1975 although the distinction is retained here to indicate specialised lending functions and substantial state involvement. Development banks were created, from independence onwards, with dual goals of accelerating sectoral economic development and exerting government influence over investment patterns through direct intervention and credit policy. Development-type banks are generally not deposit takers. Capital funds are raised from government as well as from foreign donor and commercial agencies. Information upon development-type banks activities in Côte d'Ivoire is extremely scarce because they operate in a highly politicised environment and because of a poor track record in terms of accountability and efficiency.

Development-type banks have experienced severe difficulties in the 1980s owing to a high proportion of non-performing loans and poor management. Four of the six development-type banks existing in 1980 have since been put into liquidation. The housing and public works lending agencies (BNEC and BICT respectively) were liquidated in the 1986/87 financial year. After a two-year enquiry, accompanied by blocked deposits and frozen credit operations, the industrial development banks CCI, once the fifth

largest bank in Côte d'Ivoire, and BIDI have also been put into liquidation [9].

BIDI and CCI accounted for 5.7 per cent of banking assets in 1987, whilst BNEC and BICT probably accounted for about 5 per cent of 1985 banking assets. The total assets liquidated are equivalent to US$ 540 million at 1987 exchange rates or 5.3 per cent of 1987 GDP. The proportion of bank loans recoverable is not known.

The agricultural development bank (BNDA) with 5 per cent of total banking sector assets continues to operate but is plagued by problems similar to those of the other now defunct development banks. BNDA has relied on 'temporary' BCEAO (Central Bank) overdrafts at punitive rates of interest to keep afloat and its accounts are not publicly available suggesting serious balance sheet problems.

The final development-type bank is the *Compte de Gestion des Dépôts of the Compte Autonome d'Amortissement* (CAA) a public sector agency which accepts deposits from the public sector, issues bonds and on-lends to state agencies, state owned banks or the Central Bank (World Bank,1988:p101). During periods of export boom the CAA can be a source of rapidly increasing liquidity in the banking system, as the surplus from the agricultural price stabilisation fund (CSSPPA) enters as deposits into the banking system.

Foreign Incorporated Banks

The five foreign incorporated banks provide normal deposit money services although access to accounts is restricted to high income and expatriate workers by internal bank policy. Lending operations tend to be more specialised than local banks and are particularly concentrated on export and import financing. Representative banks are legally not permitted to accept deposits and act mainly to advise on trade or conduct business with overseas bank branches.

Deterioration of Banking System

The detailed reasons for development type banking failures are not yet known but the intertwining of politics and state banking at the highest levels are likely to have contributed to poorly performing loan portfolios. It is indicative that more than 25 per cent of total bank credits in the West African Monetary Union (which is dominated by Côte d'Ivoire) are reported to be non-performing (World Bank,1989b:p72) and likely that these credits have been concentrated in state controlled banks. The liquidation of four development-type banks has been achieved without further bank runs for other troubled institutions but has resulted in a

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[9] See *West Africa* 24 July 1989 p1222.

substantial loss of banking liquidity and has had a contributory impact on the banking sector liquidity shortage in 1987.

A secondary factor is that Governments in the UMOA are unable to monetise defects, so the prospect of forced (and probably uncommercial) lending from state controlled banks is a potential substitute for government expenditure. A recent report (World Bank 1989c:p170) goes further and argues that CFA countries governments

> "...forced the commercial banks to finance expenditures that would normally have been met by government subsidies. That led to the collapse of the banking system in Benin and has put the system in other CFA countries under strain."

The macroeconomic impact of development bank collapses is not confined to the deflationary impact of liquidation. The direction of credit to less productive enterprises or towards consumption expenditure has lowered the efficiency of intermediation of the banking sector, and by implication restricted credit to more productive enterprises[10].

The 'crowding out'[11] argument is especially valid for banks heavily exposed to a few near bankrupt borrowers where incentives are to lend more funds rather than demand repayment or servicing of existing debts which could threaten the borrowers survival. Crowding out in these circumstances gives favour to many of least creditworthy borrowers, whose interest payments are effectively capitalised by additional lending. The extent of liquidations of development-type banks during the 1980s suggests the deterioration of the quality of the banks asset portfolio may have been covered up by such lending practices.

The dominance of state ownership and support for development-type banks has involved substantial losses of public funds, which in turn, have retarded the process of fiscal adjustment during the 1980s. To the extent that private or commercial deposits have been lost or blocked by development-type banks, flight of capital may be encouraged to foreign banks where the risk of banking insolvency is perceived as lower.

Other Financial Institutions

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[10] Some reports allege widespread widespread fraud and embezzlement occuring in development banks e.g. *West Africa* 1 May 89 p677.

[11] Crowding out refers to the effects of giving preference to lending particular borrowers creating shortages for other (non-privileged) borrowers. It is usually applied to governments borrowing behaviour in relation to the private sector.

The non-bank financial institutions (3.5 per cent of total financial sector assets in 1987) are, broadly, leasing and financing operations (most significantly for vehicle finance) and are frequently controlled by commercial banks. Monetary policy will have indirect repercussions upon these institutions as two thirds of deposits come directly from commercial banks. Contractionary credit policy will have overspill effects in raising the cost and availability of the specialised lending undertaken by these financial institutions.

Insurance Markets [12]

Insurance markets are a more important source of domestic savings mobilization with technical reserves (*provisions techniques*) of 6-7 per cent of the total assets of the banking system. For the 32 companies operating in 1982, nearly half of premium turnover was accounted for by compulsory car insurance. Although growing rapidly, life assurance accounted for only 4 per cent of the market and did not receive tax concessions to encourage this saving channel. Considering the relatively informal collection procedures attractive to small savers in the insurance market there would appear to be significant potential for mobilising additional savings as shown by the Zimbabwean example where life assurance premiums are a major source of savings for low and middle income earners and an important source of funds for the banking system. (see *Financial Gazette* (Zimbabwe), Focus On Finance Supplement 8 September 1989).

Technical reserves must legally be held in fixed proportions of domestic financial assets of varying liquidity. This ensures no capital leakage from the domestic financial system. Insurance companies are, for example, a captive market for CAA long term bonds with nearly half of their reserves invested in this instrument instrument (World Bank,1988 show that 85 per cent of CAA issues 1984-87 were accounted for by institutional investors).

The Stock Exchange

In 1976, the Abidjan stock exchange was opened to regulate and encourage an emerging financial market. A review of the first few years' trading [13] emphasised that the *Bourse des Valeurs* was created as a way of mobilising domestic savings, and that the government wished to broaden shareholding amongst Ivorians and hence to increase local ownership of foreign firms.

The CAA issues bonds twice-yearly but net issues rarely exceed half a per cent of GDP. This indicates that non-bank financing

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[12] This paragraph draws principally on *Revue Economique et Financiere Ivoirienne* No 18 Jan 1986.

[13] See *Revue Economique* (1980) Rapport de synthèse sur l'activité de la Bourse des quatre dernières annèes, pp56-63 .

of the government deficit is limited in quantity. These bonds are generally purchased by insurance companies and institutional investors as a required asset and not by private individuals, although private purchases have increased since 1984 when advertising was increased. Trading volumes are low (<3% total traded 1980-87 average) and prices move slowly with the result that the yield curve is unfavourable for longer term bonds. CAA bonds generally have a ten year maturity repayable in ten equal installments. FNI (*Fond National d'Investissement*) bonds are issued against FNI certificates which are purchased compulsorily from profits as an incentive to increase investment. The FNI bonds are part of a complex tax-rebate system which only partially augment savings by requiring one third of the bond price in cash and two thirds in FNI certificates. RCI bonds are long term (40 year) maturities when FNI certificates are transferred into bonds without additional cash injections as in the case of FNI bonds. In both the latter cases the bonds do not represent new savings but a recycling of previous tax paid. There is no significant short term treasury bill market nor does there appear to have been a concerted effort to develop one.

In the long run the development of a securities market could lead to open market operations to control liquidity in the economy, but at present several factors restrict the development of such a market. Firstly, trading restrictions in the *Bourse* limit bond price movements to 3 per cent and equity prices to 5 per cent in a trading session and quotation brackets are narrow. Price movements are limited and there is a wide range of posted effective yields. Secondly, most participants in the bond market invest in securities for tax reasons or because of statutory regulations requiring them to do so.

If these restrictions could be removed, which would increase the liquidity of government securities, an invigorated trading market in shorter term securities could encourage additional domestic saving, particularly from funds presently flowing abroad. Furthermore open market operations could substitute for the present rediscounting system as a method of monetary control (rediscounting is discussed in section 3).

The number of firms quoted on the *Bourse* rose from 6 to 24 between 1976 and 1988 whilst stock exchange capitalisation has increased from 2 per cent of GDP 1976 to 4 per cent by 1987. Ivorian branches of foreign firms[14] were persuaded to make available up to 20 per cent of equity to be purchased largely by Ivorians to further a policy of Ivorian ownership of the economy. In practice Ivorian holdings of shares have not increased as a proportion of total holdings and in the decade to 1986 averaged close to 30 per cent. Speculation was to be discouraged by the aforementioned limits on daily price movements and also with restrictions upon non-nationals purchase of shares. As a result trading levels of less than 1 per cent stock market

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[14] The most important sectors were banking, commerce and distribution, and food/beverages.

capitalisation are usually recorded. Until the stock exchange becomes considerably more sophisticated in its operations it would seem that it is unlikely to benefit the small private saver, who does not have access to unit-trust (mutual fund) type investments or to the small/ medium enterprise as a source of funds. We shall see in section 3 that access to equity finance has many similarities to the credit market, the recipients of equity finance are predominantly large firms, with a large foreign interest.

Although a functioning stock market is not essential for an efficient process of financial intermediation, as a specialised agency providing long term finance for the business sector it fills a particular role in the financial system which no other institution has taken up in Côte d'Ivoire. Development-type banks which had specialised in long term lending, in retrospect do not appear to have been the best institutional vehicle for long term industrial finance although more evidence is required to demonstrate this conclusively.

Informal Money Markets

Unorganised money markets, defined by Tun Wai (1977) as informal credit supplied by money lenders and rural institutional credit, are certainly prevalent in Côte d'Ivoire although little information exists as to the relative sizes of informal and institutional credit.

Rotating savings organisations, known as *tontines* in Francophone Africa, are operated by individuals making regular fixed savings and borrowing from the accumulated pool in turn. Allechi (1988) reports survey data from five FZ countries including Côte d'Ivoire which show participation of 28.6 per cent of the (active) population in tontines compared with 13.2 per cent holding a bank account and 13.4 per cent with a savings account. (Touré,1985:pp234-246) reports a similar type of system operating in urban areas where small daily savings, from traders in particular, are banked by an intermediary in the formal sector and returned less a commission charge at the month end. The intermediary also provides credit arrangements as a multiple of total monthly deposits.

Interviews[15] with cocoa and coffee farmers representatives in the Gagnoa region of Côte d'Ivoire revealed that borrowing was predominantly undertaken in between harvesting seasons for consumption (such as school fees, funeral and marriage obligations) and for agricultural inputs. These *prêts a soudeur* (bridging loans) were made from the formal sector, from branches of the agricultural bank BNDA, and from *acheteurs*, the middlemen in the agricultural marketing system. More than half of farmers

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[15] Carried out by the author on an informal basis 7-8 May 1989 with village chiefs, PCDI leaders and farmers councils of three villages.

indicated, during interviews with the author that in the 1988/89 season loans were not available from either formal or informal sources which coincided with acute liquidity shortages in the Ivorian banking system. This anecdotal evidence suggests that the availability of rural informal credit is significantly related to formal credit availability particularly in cases where informal loans are not the counterpart to informal savings.

It appears that a substantial proportion of informal credit is in fact formal credit obtained through an intermediary, which suggests that the effects of monetary control will filter through to informal markets. The existence of intermediaries is a direct result of formalities and regulations concerning opening a bank account. To obtain a demand deposit account (*compte à depôts*) a statement of regular income must be produced which in itself excludes the great majority of the Ivorian population [16]. A savings account (*compte d'epargne*) in one of the big four banks requires a minimum deposit of 25,000 CFA or 11 per cent of per capita GDP (1988), a substantial sum to those without a regular income. Although major banks have branch networks extending to all major towns in the country, banking remains a service for the urban community with approximately 70 per cent of personal accounts held in Abidjan. Thus the existence of informal credit markets should not be seen as a major impediment to the conduct of monetary policy but a consequence of the difficulties of providing banking services to low or intermittent income earners.

The existence of informal money markets as a substitute for saving and borrowing from commercial or development banks has the effect of maintaining the cash ratio at a higher level than it would be otherwise. This reduces the size of the money multiplier. For the use of reserve base targeting of the money supply the existence of substantial informal money markets could reduce the effectiveness of monetary control by increasing the instability of the cash ratio, as cash is held for non-transactionary purposes, and increases money multiplier instability. However the observed stability of the cash ratio to total money supply, apart from adjustments to price instability, suggests that informal markets do not strongly influence the conduct of monetary policy.

Savings Mobilization

Figure 2 reveals considerable fluctuation over the twenty year period to 1987 in the ratio of gross domestic savings (GDP less government and private consumption) to GDP. Sharp increases in gross savings occured during the brief commodity export boom periods of 1977 and 1985. In periods subsequent to the booms gross domestic saving has tended to decline, falling to a record low of 19 per cent GDP during 1987 which is indicative of a secular decline in savings rates.

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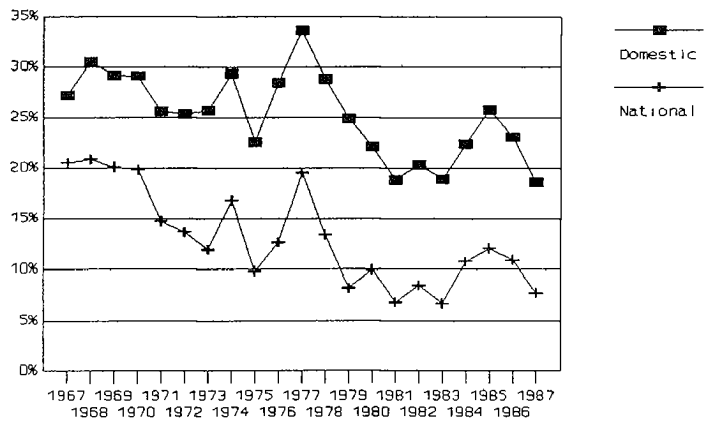
[16] On the other hand banks are legally obliged to provide deposit facilities for government and parastatal employees.

Figure 2

GROSS SAVINGS RATES

1967-87



Source World Bank, World Tables

Changes in the level of public savings are the primary source of aggregate savings changes owing to the operations of the public commodity price stabilisation fund (CSSPPA). The magnitude of the changes are indicative of the importance of commodity exports. The fund guarantees exporters a fixed price for cocoa, coffee, cotton, sugar and rice, based upon an administratively set producer price, transport costs and a profit markup. Any difference between the world market price and the guaranteed price accrues to the stabilisation fund. In practice export prices have been well above the c.i.f. cost price and the stabilisation fund has generated surpluses which averaged 7 per cent of GDP during 1975-85 and peaked at 15.5 per cent of GDP in 1977 (Schiller,1988). The surpluses did not accumulate as a stabilisation fund but were transferred to finance other government expenditure, in particular a large infrastructural expansion programme.

The more recent commodity price falls have reversed the situation and the CSSPPA has operated at a loss in 1988 and 1989, reducing gross domestic saving, resulting in substantial borrowing from the domestic banking system to finance purchases. In July 1989, the CSSPPA announced a reduction of producer prices for the 1989/90 season with cocoa prices, for example, falling from 400 CFA/Kg to 250 CFA/Kg largely in response to the falling world

cocoa price. Although this was contrary to previous Government policy which had stressed the importance of stable producer prices, the domestic financing requirements of the marketing board were having the effect of crowding out private firms from access to credit (this is discussed later in detail). Although commodity export booms tend to increase domestic savings this effect is generally only temporary. In Côte d'Ivoire in the late 1970s, consumption expenditure increases rapidly followed increases in export income so that expanded savings were a temporary phenomenon (section 4).

By adjusting gross domestic savings for resources which are transferred abroad, gross national saving is obtained which more accurately represents the resources available for growth. From Figure 2 the effect of removing net factor income (profits, dividends, interest) and net transfers (largely expatriate savings and Ivorian savings in foreign accounts) from domestic saving is uniformly negative. Gross national savings have also fallen markedly, from nearly 15 per cent during the 1970-78 period to 9 per cent of GDP in the 1979-87 period.

The increases in factor payments made to the rest of the world (Table 4) are attributable to increases in foreign debt interest payments during the 1980s. Apart from debt repudiation and repayment moratoria there are no domestic financial policies which could immediately reduce these outward flows. The possibility of future debt reduction may however reduce net outward flows.

Table 4: Elements of Domestic Saving
(in per cent of GDP)

Period	72-75	76-79	80-83	84-87
Gross Domestic Saving	25.8	29.0	20.0	22.5
Net Factor Income	-3.5	-3.9	-6.4	-8.0
Net Transfers	-4.7	-6.0	-5.6	-4.2
Gross National Saving	13.0	13.4	8.0	10.4

Note: Gross Domestic Saving less Transfers less Factor Incomes equals Gross National Saving.
Source: World Bank, World Tables 1988/89.

Net transfers, which vary between 4 and 6 per cent of GDP (outward), may be more readily influenced by policy. Transfers by expatriates (European) could be diminished by more attractive savings instruments, as would be the case for Ivorian savings channelled into foreign accounts. Transfers of migrant worker

savings to neighbouring countries (Burkina, Mali in particular) are also known to be substantial from analysis of movements of banknotes between countries issuing CFA notes. Although the breakdown of net transfers is not available it is clear that they remain a sizeable fraction of domestic savings that is not available for investment purposes

If foreign finance is not available to supplement low domestic savings, investment levels and future economic prospects may be affected. Interest rate policy may act to increase the gross domestic savings rate by giving a higher return on deposits and may also reduce transfers abroad by nationals and expatriates thereby increasing the national savings rate. These policy reforms are discussed in more detail in section 3, monetary policy instruments.

3. INSTRUMENTS OF MONETARY POLICY [17]

For control of the level of global liquidity in the economy, the Central Bank has the following direct instruments to influence the availability of credit:

* Central Bank Refinancing Credit Limits (*concours globaux*)
* Reserve requirements
* Prior Authorisations

Indirect control of liquidity in the banking system via changes in money demand are effected through interest rate adjustments, although interest rate policy is more closely connected with sectoral allocation of credit.

The BCEAO also has a sectoral credit policy which is based upon:

* Priority sectors
* Sectoral coefficients
* Preferential interest rates.

This section considers the scope and effectiveness of these instruments in turn.

Central Bank Refinancing

The BCEAO differs crucially from many other central banks as it acts not only as a lender of last resort but it is an important source of refinancing (technically rediscounting) for the domestic banking sector through its local agencies in each UMOA country. Table 5 shows the proportion of credit to the economy which is refinanced by the Central Bank, which has averaged close to 40 per cent since 1982.

Refinancing operations, which affect the size of the monetary base, have been the principal instrument utilised to influence the level and, to a lesser extent, the composition of credit in the economy. Central Bank credit takes the form of short term money market advances, rediscounts at either preferential or normal discount rate and comparatively few fixed rate loans of up to ten years maturity. These credits are backed by discount bills deposited at the Central Bank. The maximum proportion of a medium to long term loan refinanceable by the Central Bank varies according to the level of priority accorded to the activity financed. This ranges from 90 per cent of loan values for small and medium businesses and social infrastructure investment, to 50 per cent for most types of non-priority investment.

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[17] Official publications summarising monetary and credit policy are BCEAO 1976a, 1976b and 1987a.

Table 5: Credit and Refinancing
(CFA Billions)

Year	Short-term: Non Agric	Short-term: Agric	Medium & Long Term	Total	Per Cent Credit/ GDP	Per Cent Refinanced By BCEAO
1979	436.3	91.0	264.5	791.7	40.7%	25.8%
1980	434.1	126.1	328.8	889.0	40.0%	30.6%
1981	424.9	187.2	354.3	966.5	42.2%	38.5%
1982	491.7	172.5	357.1	1021.3	41.1%	40.4%
1983	581.0	163.6	356.7	1101.3	42.7%	43.1%
1984	591.5	160.7	330.6	1082.8	37.7%	40.8%
1985	587.0	179.3	332.4	1098.7	35.0%	36.6%
1986	601.5	182.8	331.6	1115.9	34.4%	38.0%
1987	677.0	231.0	302.5	1210.5	39.6%	42.5%
1988	607.9	302.8	289.3	1199.9	na	42.5%

Notes: Credit to economy constitutes:- credit from commercial banks, credit from financial institutions refinanced by the central bank, *obligations cautionees* and bad debts from Oct 1985.

Source: BCEAO, *Statistiques Economiques et Monétaires*.

Refinancing and Monetary Stance

Annually a country ceiling (*concours global*) for total central bank credit (all types) is jointly determined by the National Credit Council and the BCEAO *Conseil d'administration*. Because of the significance of central bank refinancing operations in the credit market, the change in the level of the country ceiling usually defines the general monetary stance for the year in question.

Determination of a specific country ceiling is taken within the framework of the overall official gross foreign asset position [18] of the union which, according to a rule in BCEAO statutes, should not fall below 20 per cent of its sight liabilities[19] for more than three consecutive months without steps being taken to remedy the position (BCEAO,1973e). This coverage rule is a strong constraint upon money creation if effectively applied, as sight liabilities comprise virtually all liabilities which the BCEAO agency has discretionary powers to adjust in the short term. So, when the 20 per cent ratio is breached, reductions of central bank refinancing should feed through to reductions in bank credit thereby constraining the rate of money issue.

Since September 1986, the UMOA level of foreign assets has been consistently below 20 per cent of sight liabilities. During 1988 alone, it declined from a coverage of 12.6 per cent to 7.1 per cent. This development was a reflection of a deteriorating trading environment and also, a certain reluctance to impose a contractionary monetary policy in all UMOA states regardless of their individual foreign asset position as well as a certain disability to impose effective restrictive policy.

The 20 per cent coverage requirement is breached consistently at a country level as well as at the UMOA level. Côte d'Ivoire for example has operated at less than 2 per cent coverage for most of the 1980s. However it would appear that the aggregate stance will reflect the overall UMOA foreign asset coverage and that countries with low or negative growth of refinancing are those with coverage substantially less than 20 per cent.
For example, prior to 1987 UMOA foreign asset coverage was less than 20 per cent (18.5% December 1986) and a somewhat restrictive refinancing policy was required. Individual country refinancing targets are set with reference to local coverage levels (see Table 6).

Countries such as Côte d'Ivoire, Benin and Senegal with low coverage are programmed to have a contractionary refinancing policy, whilst countries contributing to the pooled reserves have a more expansionary stance. Thus the combination of distinct country issue zones and differing refinancing policies allows a considerable degree of variation in announced monetary policy and hence in potential price and output developments in UMOA countries.

It is also clear from Table 6 that countries which overshot refinancing ceilings were those actually programmed to implement a contractionary refinancing policy. Thus monetary policy was

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[18] Gross foreign asset position consists of holdings of gold, IMF assets and holdings of foreign currency.

[19] The major sight liabilities of the Central Bank consist of : notes and coins, sight deposits from banks and financial institutions and foreign currency liabilities.

Table 6: UMOA Monetary Policy Stance 1986 and 1987

Central Bank Lending To The Economy
(CFA Billions)

Country	1986 Ceiling	1986 Outcome	1987 Ceiling	1987 Outcome	Change in Ceiling %	1986 Year End Official Net Foreign Assets
Benin	55.4	58.5	56.4	63.0	1.8	-29.9
Burkina	19.5	19.0	24.5	24.7	25.6	54.0
Cote d'Ivoire	524.3	543.2	506.7	632.8	-3.4	-318.3
Mali	30.2	52.5	33.7	53.5	11.6	-46.9
Niger	37.6	38.3	39.5	42.5	5.1	17.1
Senegal	187.6	202.7	181.1	200.7	-3.5	-197.0
Togo	25.0	22.2	26.6	23.9	6.4	67.3
Total	879.6	936.5	868.5	1041.0	-1.3	-454.0

Notes: Total net foreign assets does not include an additional 95.5 CFA bn assets jointly held and adjustments.
Global Ceiling represents total central bank credit to public and private sectors.

Source: Zone Franc Rapport 1987.

least effective where it was supposed to be most effective. This lack of effectiveness explains the persistence of low foreign asset coverage by countries such as Côte d'Ivoire. In the next section we consider the components of refinancing and the reasons for overshooting the refinancing ceilings in Côte d'Ivoire.

Breaking the Refinancing Ceilings

Table 7 breaks down the BCEAO refinancing ceilings into three main categories: ordinary credit, rural credit and credit to the Treasury. Corresponding to each category ceiling are the end year outcomes. Refinancing ceilings are effectively the monetary targets of the Central Bank and the performance of outcomes against ceilings is a firm indication of the effectiveness of monetary policy in attaining predetermined targets.

From Table 7 it is evident that the main area of target overshooting is for rural credit (considered in the next section in more detail). Credit to government adhered closely to the targets highlighting the important and effective restraint on

Table 7: Central Bank Refinancing - Ceilings & Results

Billions of CFA Francs

Year	Credit To Banks and FI's				Credit To Treasury	
	Ordinary		Rural			
	Ceiling	Result	Ceiling*	Result	Ceiling	Result
1980	147.7	139.6	7.0	125.6	37.0	75.0
1981	188.9	177.4	163.0	193.9	87.7	65.0
1982	na	239.9e	na	172.5e	na	90.0
1983	289.2	291.4	153.7	180.5	106.5	95.2
1984	311.0	295.3	150.0	147.5	115.0	107.4
1985	325.8	254.8	142.0	148.1	120.5	111.6
1986	255.0	243.5	145.0	180.4	124.3	119.5
1987	216.0	279.3	161.0	231.0	129.7	122.5
1988	na	198.5	na	302.8	na	138.2

Notes: * indicative, na not available, e breakdown estimated from total.
Source: BCEAO.

direct credit to government. Ordinary credit (credit to the rest of the economy) exceeded target in 1987 but otherwise was more likely to be significantly below target, as was the case in 1985.

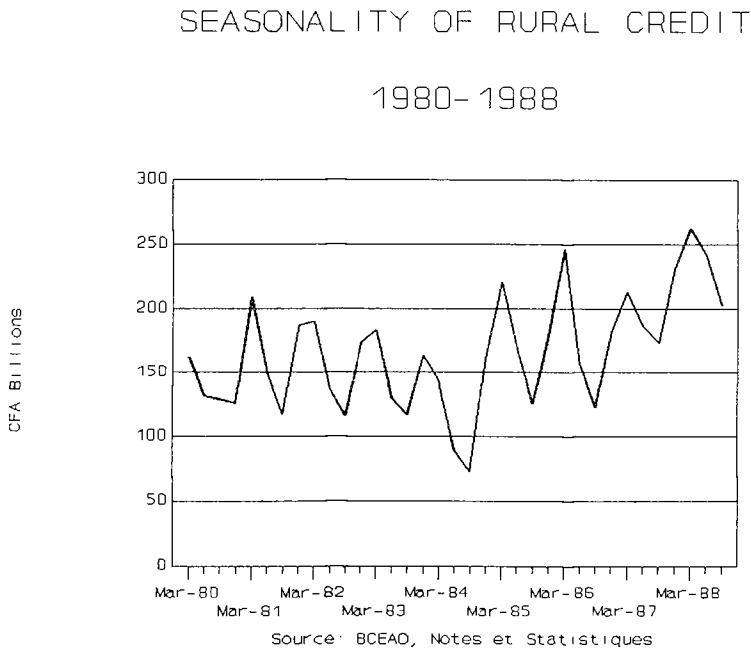
Rural Credit

Refinancing of rural credit for the three stages of production of purchase, stocks and export is regarded as priority credit both in terms of availability and the discount rate applicable, and has an indicative ceiling based upon estimated requirements. Requirements in excess of the ceiling for rural refinancing are correspondingly met whenever possible, consequently the indicative ceiling is frequently exceeded. In the 1980s, the indicative ceiling was breached in every year but one to 1988.

In theory rural credit refinancing is short term, and credit advanced during or after the harvest period is repaid following exportation. Figure 3 shows a marked cyclical peaking of agricultural credit in the first quarter of every year. Because total rural credit rarely dips below CFA 120 billion, it is likely that a considerable portion is rolled over annually, and, more importantly, that this proportion is rising as 1988 base level has risen substantially to more than 170 CFA bn. This is a strong indication of stockpiling policies.

The lack of effective restriction upon the level of rural credit refinancing has been exploited by the Ivorian government with a

Figure 3:



policy of stockpiling of agricultural exports during the recent commodity price slump. As a proportion of total domestic credit (excluding credit to government), refinancing for stockpiling alone has doubled in the two years to December 1988 (see Table 8). Whilst refinancing typically peaks in March following the end of the coffee and cocoa season, BCEAO figures show that the proportion of total credit allocated to refinancing has continued to rise in 1989. BCEAO notes on the 1988 monetary situation describe rural credit growth as 'explosive'[20].

Rural Refinancing and The CSSPPA

From the earlier discussion of savings mobilization, it is clear that the increased demand for rural refinancing is a result of the commodity stabilisation scheme operated by the CSSPPA designed to insulate farmers from commodity price fluctuations. With a decline in the world cocoa price (and coffee prices in 1989) the CSSPPA credit requirements have rapidly increased to meet the difference between the world and producer prices and to fund stockpiling. Owing to the importance of export agriculture

[20] See BCEAO, *Banques et Monnaies* No 381 April 1989.

in the Ivorian economy it is important to analyse the monetary effects of the stabilisation fund.

Stabilisation surpluses accrue to government by transfer through the investment budget of the CAA (which is outside the formal budgetary framework of government). The effect of financial transfers to the CAA is an expansionary fiscal impulse. Schiller (1988:p11) notes that stabilisation surpluses resulting from the depreciation of the CFA against the US dollar during 1983-85 were largely transferred to the CAA for debt servicing:

'...the transfers from the CSSPPA to the CAA represented....a redistribution of windfall gains from those who benefitted from the temporary weakening of the local currency to those who suffered from it.'

More generally, stabilisation surpluses were a form of taxation of the rural economy to develop the industrial and infrastructural base.

Stabilisation deficits are financed by the domestic banking system using access to central bank refinancing facilities, hence directly increasing the monetary base. As crop financing (including stockpiling) is effectively without a ceiling and a priority credit area, increases either displace refinancing of other activities or expand domestic credit overall. In practice, there appears to be a combination of both monetary expansion and displacement of ordinary refinancing. In 1987, for example, the breaching of the rural refinancing ceiling did not result in an under achievement of the ordinary credit ceiling, in fact quite the reverse. But overshooting rural credit in 1985 and 1986 was accompanied by low levels of ordinary refinancing. During 1988 however the crowding out argument is stronger. An expansion of rural refinancing by CFA 71 billion accompanied an ordinary refinancing contraction of nearly CFA 81 billion. The likelihood of crowding out of non-rural borrowers during 1988 was also confirmed in discussions with commercial bank officials.

Although the operation of the CSSPPA has eliminated the effects of fluctuating beverage prices and exchange rate changes from producer prices at the cost of either fiscal expansion (surplus) of domestic credit expansion (deficit), increased price flexibility could smooth the actual income flow to farmers from export proceeds and reduce monetary and fiscal fluctuations.

Côte d'Ivoire has a sufficient share of world cocoa output that domestic output shocks will affect world prices (this is true to a lesser extent for coffee as well). Thus a poor Ivorian harvest would be partly compensated for by increased world prices but the fixed producer price eliminates this offsetting price movement to the producer. The recent announcement of reduced producer prices for the 1989/90 season marks a step towards increased price flexibility and should reduce the amount of credit allocated as priority rural refinancing, but it is likely to have occurred because of the unsustainable credit requirements of stockpiling at the previous producer prices.

Table 8: Recent Rural Credit Refinancing

Refinancing of: Coffee, Cocoa, Rice, Cotton and Maize Stockpiling

	CFA Bns	% Total Credit
Dec 1985	113.5	10.3
Dec 1986	113.7	10.2
Dec 1987	175.9	14.5
Dec 1988	247.4	20.6
Jan 1989	278.0	na
Feb 1989	299.6	na
Mar 1989	313.2	na

Notes: Total Credit = Non government credit from monetary system

Source: BCEAO

In summary according a high priority to rural refinancing is the main cause of overshooting the limits announced for central bank intervention. As a result gross foreign asset coverage remains far below the required minimum (and net foreign assets tend to fall) and monetary policy is rarely as contractionary as had been intended. In extreme cases, such as 1988, this system can crowd out other types of borrowing. However recent changes in agricultural pricing and sales policies would appear to reduce refinancing requirements below their 1989 peak.

Government Credit

Credit to Government is strictly limited by Article 16 of BCEAO statutes to 20 per cent of the previous year's fiscal receipts. In practice, this is treated as an automatic entitlement. However, as shown in Table 7, the imposition of a limit is an effective means in curtailing direct central bank credit to government. In the absence of specific coordination of fiscal and monetary policy, the credit limit to government may be

insufficient to fund borrowing requirements particularly as sources of new foreign borrowing are extremely limited by debt repayment moratoria. There are several routes by which additional credit can be obtained hence rendering the ceiling ineffective:

* The ceiling does not include the financing of parastatal bodies. By reducing government net lending to parastatals the government direct borrowing requirement is reduced and the private sector must compete with parastatals for credit.

* Delaying payment to the private sector which creates increased private sector credit demand.

* Foreign Borrowing. Limiting domestic bank credit to government did not restrict overall borrowing. With the advantage of a convertible currency and booming exports Côte d'Ivoire borrowed heavily during the 1970s and entered the 1980s with what turned out to be a severe foreign debt servicing problem.

Other Credit

The final component of the global credit allocation is the refinancing of ordinary credit from commercial banks and financial institutions. This operates on the Central Bank balance sheet as a balancing item, particularly in situations of liquidity shortage.

With a lower priority than rural refinancing and credit to government (within the ceiling), and a lower level of foreign assets than anticipated, an increase in ordinary refinancing requires either an increase in deposits at the Central Bank or new money issue[21].

With money issue pre-determined by the BCEAO and not subject to the discretion of the local agency after the issue target is set, the marginal ordinary refinancing decision is dependent upon the amount of funds placed on the overnight money market and the amount of credit available to the Côte d'Ivoire agency from the BCEAO[22].

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[21] This can be seen from a simplified balance sheet of the central bank:

ASSETS	=	LIABILITIES
Foreign Assets +	=	Notes & Coins +
Credit To Government +		Banks & Other Deposits +
Rural Credit Refinancing +		Foreign Liabilities
Ordinary Credit Refinancing		

[22] This is because short term refinancing is carried out on the interbank money market which is supervised by the agency of the BCEAO.

Commercial banks know in advance that the amount of ordinary refinancing available is dependent on the liquidity of the local agency of the central bank. If the central bank has sufficient liquidity, the individual commercial bank can expect refinancing up to its portion of the ceiling. In positions of tight liquidity its allocation can only be known on a day to day basis. As shown in Table 7 the strengthening of the refinancing ceiling from 1980 by removal of its "indicative" nature has resulted in a fairly close adherence to the refinancing ceilings. However in 1987, the indications are that the credit ceiling was exceeded by nearly 30 per cent, and that the Central Bank had serious difficulties in carrying through serious credit restrictions despite having the instruments to so.

From 1980, central bank control was extended by stipulation of maximum monthly ordinary credit increases (ie credit eligible for rediscounting at the Central Bank) which operate counter-cyclically to the level of rural credit. Penalties for non-compliance include non-interest bearing deposits at the Central Bank, although in practice this has not occurred. Evaluation of monthly credit target compliance is hampered by BCEAO secrecy for both targets and outcomes[23]. Local banks reported general compliance to the targets with the exception of during the first quarter due to delays in releasing credit targets.

Total Credit Ceilings

From 1976, the BCEAO has set comprehensive annual indicative targets for monetary aggregates although the operational policy was confined to achieving the narrower Central Bank refinancing targets. Targets for overall net foreign assets, domestic credit components and total domestic liquidity are not published and appear to result from the framework utilised to determine the monetary stance in each UMOA country which is basically an IMF derived exercise of financial programming. Bhatia (1985) produced data for years 1976-80 on targets and actuals showing a substantial overshoot in UMOA domestic credit annually to 1979, principally due to rapid private credit growth in Côte d'Ivoire during 1976-79 (reproduced in Table 9).

The income from the commodity price boom 1975-78 only permitted a very slight improvement in the net foreign asset position and a somewhat more significant increase in government deposits[24] but allowed very substantial increases in domestic credit. Thus monetary policy only partially sterilised the foreign exchange inflows. The tendency for private credit to increase appeared to

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[23] Credit data is given by type of issuing institution and by purpose in BCEAO, *Notes et Statistiques* but not specifically by type of credit.

[24] Mainly through a voluntary deposit scheme at the central bank for CSSPPA.

Table 9: Côte d'Ivoire Monetary Survey - Targets and Actuals

(CFA billions)

Year	Net Foreign Assets		Net Credit To Government		Net Credit To Private Sector		Broad Money	
	Target	Actual	Target	Actual	Target	Actual	Target	Actual
1976	-17.1	-18.0	-19.6	-2.2	322.9	391.9	282.5	350.0
1977	12.5	17.4	-21.2	-76.0	413.6	605.1	398.6	524.5
1978	40.0	24.3	-59.3	-107.5	577.5	696.3	548.7	581.6
1979	41.0	-69.0	-59.4	-114.0	740.0	791.7	670.0	566.2
1980	-28.3	-243.6	-60.7	-55.7	938.0	890.8	783.0	581.8

Notes: * Net foreign assets include long term liabilities but exclude allocations of SDR's which are included in other items net. (not shown)

Source : p54 Bhatia, 1985, p54.

have developed its own momentum by the late 1970s and translated into a rapid decline of foreign asssets as domestic absorbtion exceeded income. The fact that broad money supply was expected to increase in 1979 and 1980 yet actually fell or remained constant demonstrates that monetary officials had, wrongly, anticipated that the boom years foreign exchange receipts were sustainable into the 1980s.

Reserve Requirements

The Central Bank can require the deposit of funds from banks and financial institutions to restrict credit creation when deposits increase rapidly or to ensure a certain minimum level of liquidity. In practice, however reserve requirements have not been an important method of credit control and in preference the refinancing system has been used for restricting credit growth. To recap from the previous section this is achieved by a reduction of overnight refinancing of ordinary credit. By viewing refinancing as borrowed reserves, the BCEAO can be said to be carrying out an approach to reserves management.

The weaknesses in several of the development-type banks discussed in the review of the financial sector, with the benefit of hindsight does suggest that a closer surveillance of banking liquidity would have been beneficial. The Central Bank has two instruments with which to supervise commercial bank lending operations which do not appear to be extensively employed. A minimum ratio between the short-term liquid assets and sight liabilities can be imposed (*coefficient de trésorie*) as well as a maximum ratio between non-guaranteed loans to a single enterprise and the banks own capital and reserves (*coefficient*

de division des risques). The thrust of central bank regulatory activity appears to be directed at ensuring that banks comply with complex regulations on the growth and distribution of credit, rather than monitoring prudential regulation of banking liquidity and overseeing the quality of asset portfolios.

Prior Authorisations (*Autorisations Préalables*)

Loans in excess of 100 million CFA (US$ 0.3m) require an *autorisation préalable* (AP) from the National Credit Committee of the Central Bank which entitles a loan to be refinanced up to a certain percentage according to sector of use. As made clear in BCEAO (1976a) this instrument is intended both to control the amount of credit to the private sector and to augment the sectoral credit policy. The granting of APs is a fairly standard procedure and depends upon the intended use of credit. In practice, the AP system may have some effect in restricting loans to low priority sectors such as property, import financing and distribution by denying access to refinancing. However, applications may be scaled up for low priority sector applications. APs are not, however, a primary control instrument; despite the requirement of central bank assent for large loans its level of intervention does not appear to be significant. This conclusion is underlined by the weakness of sectoral credit policy. It is quite possible that the supervisory powers of the Central Bank are insufficient to monitor the AP system effectively.

The effectiveness of the AP system is decreased by two main factors:

* Time delays in processing APs can result in lending before notification. Authorisation typically takes six months but it is not unknown for applications to take one or two years, particularly in the case of new or foreign firms. In 1987 the Central Bank raised the problem of non-compliance noting instances of loans granted in excess of the AP.

* The limited amount of refinancing available at the Central Bank, which has been substantially reduced in recent years. Several bankers have pointed out that other sources of finance could be found for a loan refused an AP.

Sectoral Coefficients

Although APs can be seen as part of a sectoral allocation policy the sectoral coefficients are more direct in their approach to allocating credit to different uses.

The BCEAO uniformly applies to each banking institution minimum proportions of total credit to the economy to be allocated to priority sectors and maxima for non priority sectors. The system of *autorisations préalables* is in theory applied to shift credit allocation towards the priority sectors. Coefficients are revised

Table 10: Sectoral Credit - Objectives and Outcomes

		Objective= minimum		Objective = maximum		
Sector		Primary	Industry	Property	Tertiary	Other*
1980	Objective	5.0%	37.3%	11.5%	22.0%	24.2%
	Outcome	5.9%	33.9%	12.1%	20.7%	27.4%
1981	Objective	5.0%	37.3%	11.5%	22.0%	24.2%
	Outcome	5.5%	26.5%	10.9%	22.0%	25.1%
1982	Objective					
	Outcome	5.6%	36.4%	10.2%	20.3%	27.4%
1983	Objective	5.3%	36.4%	11.1%		
	Outcome	5.6%	34.3%	9.6%	22.4%	28.0%
1984	Objective	5.3%	36.4%	11.1%		
	Outcome	5.3%	34.4%	10.7%	20.7%	28.9%
1985	Objective	6.0%	35.0%	10.0%	22.1%	26.9%
	Outcome	5.0%	31.1%	9.3%	21.7%	32.9%
1986	Objective	7.5%	37.0%	9.0%	21.1%	25.4%
	Outcome	4.3%	28.1%	8.2%	26.7%	32.7%
1987	Objective	7.5%	37.0%	9.5%	21.7%	24.3%
	Outcome	3.0%	25.5%	8.0%	32.6%	30.9%
1988	Objective	7.5%	37.0%	9.5%	21.7%	24.3%
	Outcome	3.4%	26.7%	6.3%	35.6%	28.0%

Note: Other comprises: energy, water, transport, communications, administration and households. Primary: agriculture, fishing.

Source: BCEAO, Centrale des Risques.

annually. Table 10 shows that the minimum targets for primary production and industry have not been met in any of the last five years, whilst maximum targets for services and other tertiary sectors are regularly exceeded by substantial amounts. The actual sectoral distribution has deteriorated substantially in terms of the priorities outlined by the BCEAO. For example, the objective for credit to the primary sector rose from 5.0 per cent total credit to the economy in 1980 to 7.5 per cent in 1988, but actual credit fell from 5.9 per cent to 3.4 per cent; similarly the proportion of credit to industry fell from nearly 34 per cent to 26.7 per cent.

BCEAO circulars indicate that breaching the sectoral coefficients will result in the imposition of non-interest bearing deposits at the Central Bank. There is, however, no evidence that this sanction has ever been applied and the coefficients can be seen as part of the Central Bank's 'moral suasion'.

Increasing deviations from the sectoral coefficients have been caused primarily from stagnating macroeconomic growth, which has reduced the demand for credit and increased the riskiness of long-term directly productive investment in primary and secondary sectors. The following section considers the real economy effects of credit policy.

A recent BCEAO meeting in August 1989 suggested that the sectoral coefficient system will be abandoned as it clearly fails in its own stated objectives. The combination of credit allocation directives and a controlled interest rate policy (see next section) does not allow banks to adjust their lending terms to the perceived riskiness of the loan. If the present system of effective controls on lending terms but ineffective controls on credit volume does not result in increased lending to priority sectors, then when the sectoral policy is abandoned, significant changes in credit allocation would appear unlikely without interest rate liberalisation.

Interest Rate Policy

Base interest rates in the UMOA are set uniformly throughout the Union; therefore at a country level there is no flexibility for interest rate determination. Lending rates are defined in relation to the preferential discount rate (TEP) or to the normal discount rate (TEN), depending upon the sectoral use of credit. The TEP and TEN are set by the UMOA Council of Ministers and are not usually adjusted more than once a year. Most refinancing by the BCEAO (excluding money market advances) is at the preferential rate, notably rural credit.

In December 1988 and April 1989, the discount rates were raised as part of an announced active interest rate policy [25] and the spread between the normal and preferential rates was narrowed from 2.5 to 1 per cent point (see Fig 4). The increase in the preferential rate from 6 to 9 per cent represents a significant tightening of monetary policy and may signal an abandonment of the preferential refinancing role of the BCEAO.

The money market rate for funds deposited at the BCEAO (overnight, 1 or 3 months) is adjusted several times annually at the discretion of the BCEAO governor. In particular it is set with reference to the French inter-bank interest rate (Figure 4)

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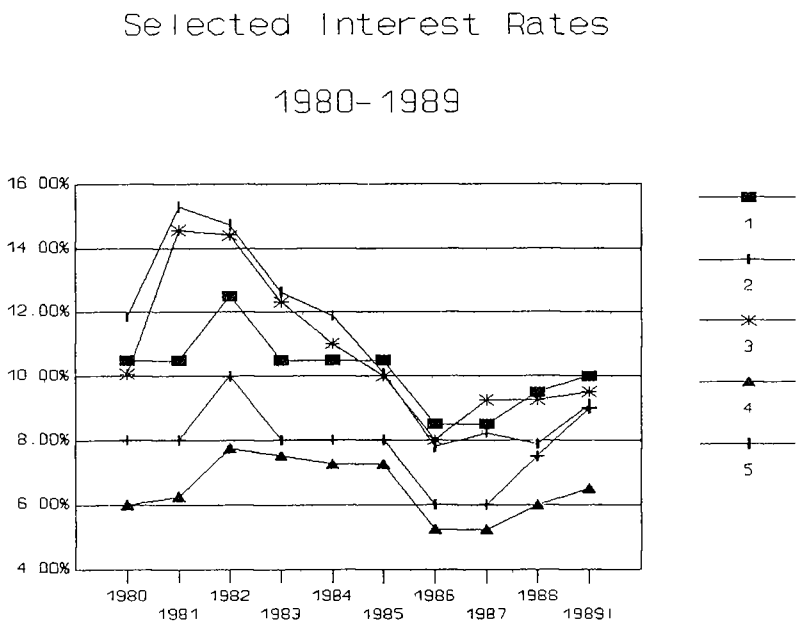
[25] The new interest policy coincided with and is generally attributed to the appointment of a new BCEAO governor Alassane Ouattara during 1988.

Figure 4:



to prevent the outflow of surplus funds from the UMOA, reflecting the ease with which funds can be transferred to and from France. The overnight money market rate represents the marginal cost of funds for the commercial banks. Deposit rates are controlled, again on a UMOA wide basis. Most time deposits have fixed rates except for large deposits and deposits of over one year where a minimum rate only is prescribed (see Table 11).

The UMOA interest rate policy reflects the tension between maintaining interest rates at levels comparable to international rates to prevent lodging of surplus funds in overseas accounts and reducing the cost of borrowing to domestic borrowers as an incentive to investment [26]. Lending rates are set in relation to the administratively determined discount rates whilst marginal funds are priced at the more market orientated money market rate.

The discussion of sectoral coefficients noted the priority interest rate scale and that moral suasion of the Central Bank has not succeeded altering the credit distribution towards medium

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[26] See for example Fadiga M A, *L'Experience De La Politique Monetaire Commune Dans L'UMOA*, BCEAO Symposium 25th anniversary of the UMOA October 1987.

Table 11: Interest Rates and Restrictions

Lending Rates:

Priority Sectors - Preferential Discount Rate (TEP) plus

Rural Financing Credit - TEP + 1-2 per cent

Small & medium businesses - TEP + 1-3 per cent

& Social Infrastructure

Other Credits - Normal Discount Rate (TEN) + 0-5 per cent

Time Deposit Rates - 5.50 - 9.50 per cent (March 1989)

Sight Deposits - From January 1985 the requirement to pay interest on sight deposits was removed.

Source: BCEAO, *Banques et Monnaies* No 381 April 1989.

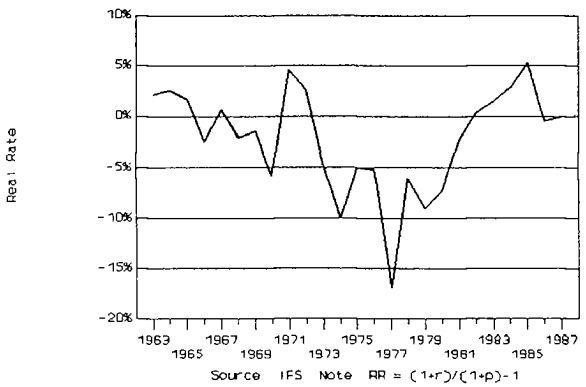
term lending to priority activities. Apart from the relatively risk-free financing of agricultural export crops, where the crop acts as collateral, fixed margins do not appear to be sufficient to induce banks to lend more to sectors such as small and medium businesses. For ordinary credit in 1988 the maximum banking margin for lending (maximum ordinary credit rate less the money market rate) was 4.25 per cent increasing to 5.50 per cent in April 1989 which compares to a default rate of 8 per cent minimum [27]. On the latter figures a requirement of collateral of about 50 per cent of the original loan would be required to break even, a substantial requirement for most small borrowers.

[27] The default rate is given by percentage of bad debts in the banking sector loan portfolio, which is likely to be a low estimate as balance sheets probably do not reflect full extent of non-performing loans. Capitalisation of unpaid interest on the balance sheet obscures the quality of loan portfolios.

Figure 5:

Real Deposit Rate

1963-88



1

Real Interest Rate

Whilst studies such as World Bank (1988) have some merit in arguing for more flexibility in deposit and lending rates, to increase competition for deposits and to increase lending incentives to higher risk borrowers (or alternatively reduce collateral requirements) several other factors suggest that liberalisation should be cautious:

* Since 1982 real deposit interest rates have been positive, or marginally negative in 1987 and 1988 (see Figure 5). These are likely to be minimum real interest rates as calculations are made on the minimum deposit rate, not the marginal rate. Recent research indicates, although the debate is not yet settled, that the interest elasticity of savings in developing (and developed) countries is not particularly high, but severely negative real interest rates do reduce financial intermediation [for example Fry (1988) and Khatkhate (1988)]. Thus the level of deposit rates in Côte d'Ivoire cannot be seen as a strong hindrance to savings mobilisation. The secular decline of savings rates in Côte d'Ivoire is in contrast with improving real interest rates.

* The effort made by banks to mobilise savings is likely to influence deposit levels. Until recently the difference between the cost of funds from the Central Bank at the preferential discount rate and retail deposits was not significant: rates for large deposits were higher than the

preferential rate and were likely to involve higher collection costs [28].

* Reliance upon the Central Bank as a source of low cost funds is likely to have diminished incentives to attract private deposits and rationalises the extensive take-up of central bank refinancing as profit maximising behaviour for commercial banks. Indicative of low incentives for deposit mobilization have been widespread queuing at bank offices. In this respect the recent raising of the difference between the preferential discount rate (TEP) and the deposit rate is likely to improve savings collection efforts.

Whilst savings in aggregate do not respond to the real interest rate, allocation of savings among financial assets in Côte d'Ivoire do respond to interest rate differentials. Real interest rates were sharply negative during the commodity boom of 1977 and the demand for cash contracted sharply although broad money measures to GDP remained relatively unaffected. In 1985 the removal of interest payments on sight deposits appeared to induce a significant shifting of deposits to interest bearing time deposits. Also the interest rate differential with France remains important (see demand for money section). Thus policy reforms should focus upon the interest rate differentials rather than levels, paying particular attention to French interest rates, refinancing rates, the effect of regulating rates and lending-borrowing rate differentials upon banks lending policies.

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[28] The average deposit rate is lowered as approximately one third of all banking deposits do not pay interest being sight deposits or time deposits below the minimum deposit level.

4. PROBLEMS OF MONETARY CONTROL

The previous section examined the institutional environment for monetary policy, how the lack of institutional development could limit monetary policy effectiveness, and the weakness of some of the Central Bank instruments. In this section, we consider the interrelationship between the operations of the Central Bank and the monetary system as a whole.

The monetary authorities in Côte d'Ivoire cannot control the total money supply. The fixed nominal exchange rate against the Franc, absence of controls on capital movements and limited scope for open market operations severely limit the Central Bank's ability to control many of the counterparts of the money supply. Following the monetary approach to the balance of payments analysis (Khan and Knight,1981), with a fixed exchange rate, the public may hold excess real money balances as a result of an increase in domestic credit (supply shock) or a money income shock (demand). The resultant excess real money balances increase expenditure which in turn results in increased imports. Without offsetting capital movements, the increased current account deficit must therefore be financed by a lowering of reserves.

In extreme cases an increase in domestic money supply is completely offset by reductions in reserves leaving the total money supply unchanged. This conclusion assumes that monetary authorities are unwilling or unable to sterilise the effects on the money supply of flows across foreign exchanges. The expansionary monetary effect of an export revenues boom could be offset by a central bank open market sale of government bonds. Open market operations in the Franc zone would raise interest rates and attract additional offsetting capital inflows negating the effect of initial sterilisation efforts unless exchange rate changes could be made. Côte d'Ivoire is faced by a shortage of instruments to influence total money supply, specifically limited scope for open market operations by sale and purchase of government securities, and no independent interest rate or exchange rate policy.

Flow of Funds Analysis

From the consolidated balance sheet identity of the banking system we derive the flow of funds identity :

1) $M = NFA + DCG + DCP - OIN$

M = Broad Money NFA = Net Foreign Assets
DCG = Domestic Credit To Government DCP = Domestic Credit To Private Sector
OIN = Other Items Net

Which can be rewritten as :

$$M_t = (X_t - I_t) + CM_t + NDC_t + OIN_t + NFA_{t-1}$$

X_t = Exports goods and services
I_t = Imports Goods and Services
CM_t = Capital Movements net

Net foreign assets in the previous time period as well as other items net are predetermined variables, whilst capital movements are not subject to direct central bank control under the UMOA statutes. Capital movements are amenable to indirect management via interest rate changes, on the assumption that there is some sensitivity to differences with international rates. However interest rate control is centralised in the UMOA leaving individual countries no effective discretion. Central bank control is clearly focussed upon management of net domestic credit.

Thus although the flow of funds approach is useful for analysing changes in money supply it is not much of a guide as to the effectiveness of monetary policy.

Monetary Control - Refinancing and Total Credit

Coats and Khatkhate (1980) suggest that the limitations of the refinancing instrument upon monetary control are:

* Asymmetry, the maximum credit restriction being a reduction of total refinancing to zero.

* Reliance upon banks to respond to the level of the discount rate when expansion is required.

* The unpredictable relation of the volume of refinancing to broader credit aggregates.

In Côte d'Ivoire there is certainly plenty of scope to employ the refinancing instrument in either an expansionary or contractionary manner, because over 40 per cent of total credit is refinanced by the Central Bank (Table 5). The previous section of this Working Paper proposed that commercial bank's lending policy could not be expected to respond very strongly to changes in the discount rate, because of the importance of differentials with other deposit and lending rates.

The ratio between changes in private credit and changes in refinancing is shown in Table 12 as a guide to the impact of changes in the volume of refinancing. This shows a different type of assymetry to that suggested by Coats and Khatkhate. When the economy is bouyant and credit growth is rapid, refinancing is quantitatively an unimportant factor in funding credit growth, therefore its influence is low. The refinancing instrument is more effective when total credit growth is slow.

Table 12: Changes in Private Sector Credit and Refinancing

Year	Change in Credit[1]/ Change in Refinancing[2]	Change in Refinancing Bn CFA
1976	6.4	15.5
1977	3.4	63.6
1978	9.4	9.6
1979	4.0	25.0
1980	1.4	67.8
1981	0.8	100.4
1982	1.4	39.8
1983	1.3	62.5
1984	0.6	-32.8
1985	-0.4	-39.8
1986	0.8	21.9
1987	1.0	90.4
1988	2.1	-4.9

Notes: [a] Includes rediscounted credit from NBFI's.
[b] Money market and rediscounts.

Source: BCEAO, *Statistiques Economiques et Monétaires.*

In the late 1970s, a unit increase in refinancing could be associated with a total credit increase which was larger by a factor of between 3 to 9. The ratio varied substantially because refinancing was not the only, or even the most important, source of funds for new lending. Rapid credit expansion in the late 1970s could take place without any central bank encouragement (or despite discouragement) because of the increased demand for deposit liabilities which had arisen as a result of rapid increases in income from the commodity price boom.

In the 1980s, some stability was restored to the credit/refinancing ratio which varied in a lower range between -0.4 and 2.1. With refinancing a more important source of funds for credit expansion, its influence upon total credit became more predictable.

In the two consecutive years when refinancing fell (1984 and 1985) the induced change in total credit was low (total credit actually increased in 1985), giving some support to the weakness of refinancing operations in credit contraction and underlining

the importance of other balance sheet items which are not amenable to central bank control[29].

The predictability of credit expansion for a given amount of refinancing is determined by the rate of growth of banks' liabilities and holdings of liquid assets. Apart from refinancing funds, this includes the availability of obtaining foreign finance from parent bank links, the willingness of the public and private sector to hold deposit liabilities in commercial banks and cash holdings.

The unpredictable variation of the credit/ refinancing ratio is best explained as a result of limited official control over these other balance sheet items. Only government deposits and cash holdings are directly controllable.

The level of government deposits with commercial banks between 1976-1987 data was consistently positive and remarkably stable, ranging between 8 and 13 per cent of total deposits (apart from a positive blip during 1980-82). Despite this stability, the Central Bank has no direct control over treasury deposits apart from the statutory constraint upon government borrowing. However treasury deposits could be used more actively to control banking liquidity. The till cash ratio (ratio of cash to deposits which reduces resources available for lending) can be statutorily controlled (*coefficient de trésorie*), but the prevalent 2-3 per cent coverage is unlikely to be lowered by considerations of banking prudence [30]whilst increasing the rate reduces the efficiency of financial intermediation (see Fry 1988).

The improved stability of the total credit refinancing ratio from 1980 does represent an improved effectiveness of the refinancing instrument in the sense that the effect of a change in refinancing is more predictable. This stability cannot be attributed to better targeting of refinancing, which does not seem to have improved markedly during the 1980s. More plausibly, macroeconomic stagnation has meant the growth of deposits was slower than refinancing, which correspondingly had a greater influence on total credit finance (for example, the refinancing:total deposits ratio rose above 50 per cent in 1980). An important factor in slow deposit growth was the steady fall in government deposits from 34 per cent to 7 per cent of total

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[29] The credit multiplier relationship: CR = m.BA + OFRL which relates the net domestic liabilities of the central bank (cash less refinancing) and other financial and real liabilities to total credit, where m is the credit multiplier, has little operational meaning in the case of Cote d'Ivoire. Because BA, net domestic liabilities of central bank, fluctuates just above and below zero, credit multipliers sign and magnitude vary without any real significance.

[30] In March 1989, a major Abidjan commercial bank had its front gates destroyed by customers after refusing to open them due to cash shortages.

deposits in the period 1980-86. The effects of other net liabilities were mixed, although in aggregate over the six years to 1986 they imparted a negative effect on credit.

Overall, the refinancing instrument appears to be least effective when it is most needed i.e. when credit is growing rapidly and monetary restraint may be required to avoid inflation and build up reserves.

Monetary Base Control

The review of refinancing mechanisms has demonstrated some of the difficulties and asymmetries of centralised control of credit. Changes in private refinancing, however, represent only a partial explanation of changes in counterparts to the monetary base. In Table 13 below the changes in the monetary base (liabilities of the Central Bank) are related to asset changes.

Table 13: Changes in Counterparts To Monetary Base 1976 - 87

CFA billions

Year	dMB	dCBp	dCBg	dR
1976-80	133.4	176.2	93.3	-136.1
1981-87	180.5	213.6	168.0	-201.1

Notes:

MB = cash issued plus banks deposits
CBp= central bank credits to private sector
CBg= central bank credit to government (net)
R = net foreign assets

Source:IFS Yearbook 1988.

That the monetary base did not increase as fast as central bank credit to the private sector in either the 1976-80 (boom) phase or 1981-87 (adjustment) phase is due primarily to the financing requirements of balance of payments deficits, which have resulted in a fairly continual decline in the level of official foreign reserves. Credit to government has two components, the largest (about two thirds of gross credit) represents funds from the IMF onlent to government which are completely sterilised additions to money supply (additions to foreign reserves are depleted on foreign currency expenditure). The second portion of government borrowing is that statutorily allowed by the BCEAO up to 20 per cent of the previous year's fiscal revenues.

Whilst balance of payments considerations reduce the effectiveness of control of the monetary base, it can still be concluded that a considerable degree of influence is potentially available in the Central Bank through control of lending to government and the private sector. The effectiveness of this depends upon the stability of the money multiplier.

Money Multiplier

The money multiplier relationship, which relates the monetary base to the money supply, is determined by similar considerations to those defining the relationship between refinancing and total credit [31]. The money multiplier is dependent upon private agents' and banks' willingness to hold cash, deposits and reserves in differing amounts and proportions.

From the identities:

1. $MB = Cp + Res$
2. $M = Cp + DEP$

MB = Monetary base
res = commercial banks holdings of cash and deposits at the central bank.
Cp = cash with public
DEP = demand and time deposits

we obtain:

3. $MS = 1/ [r(1-c) + c] .MB$

where
r = reserve ratio
c = cash ratio

The broad money[32] multiplier exhibits a surprising stability with an average percentage variation of 7 per cent per annum between 1975 and 1987 (see Table 14) and has been declining annually since 1977 with an exception in 1982. During a particular year the cash ratio rises during the harvest season as farmers and intermediaries hold increased cash balances either for transactions purposes or because they do not have

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[31] Conceptually, multipliers relate the assets and liabilities of the central bank to broader classes of monetary assets and liabilities respectively.

[32] The broad money measure was preferable to a narrower definition. In 1985 the removal of banks'requirement to pay interest on sight deposits lead to shifts towards savings and time deposits. This created instability in the narrow money multiplier but not the broad multiplier.

rapid access to formal savings markets. The decrease in the multiplier (from the cash ratio rising) is largely offset by the increase in the monetary base from the Central Bank's role in financing the harvest. During the year there is no marked trend to the money multiplier. In Table 14 the individual effects of changes in the monetary base and changes in the multiplier upon money supply are shown. They are obtained from the approximation:

3. $dM = dMB.m_{t-1} + dm.MB_{t-1}$

d = difference operator m = multiplier

Table 14: Money Multiplier and Changes in Money Supply

		Billions of CFA			
		Change	Source of Change:		
Year	Money Multiplier	Money Supply	Multiplier Note 1	Base Note 2	Combined Note 3
1975	2.44	22	-7	30	-1
1976	2.89	106	44	52	10
1977	3.12	174	28	135	11
1978	2.62	57	-84	167	-27
1979	2.46	-13	-35	24	-1
1980	2.50	16	9	6	0
1981	2.51	58	1	57	0
1982	2.74	18	60	-39	-4
1983	2.67	32	-16	49	-1
1984	2.65	132	-5	138	-1
1985	2.41	117	-76	212	-20
1986	2.29	-11	-48	39	-2
1987	2.25	1	-16	17	-0
Total		708	-143	888	-36

Notes: Sources of change defined as product of:
1 Change in multiplier and monetary base
2 Change in base and multiplier
3 Change in base and change in multiplier

Source:IFS Yearbook.

Changes in the monetary base predominate as explanations for monetary expansion over the longer term, but in particular years the multiplier can be dominant, as occurred in 1982 and 1986. These years are associated with increased reserve holdings at the

Central Bank, from deposits[33] and increased liquidity. In most of the years considered, the multiplier has an opposite effect to that of the monetary base upon money supply. Thus if the monetary authorities pursue an expansionary monetary policy, agents' preferences tend to reduce the multiplier, and the impact upon money supply, by for example holding more money in cash form.

Although the importance of the Central Bank's role in controlling the monetary base level is emphasised in the long run, it remains clear that factors other than changes in the monetary base affect short run money supply behaviour. This helps to explain the unpredictability of the refinancing instrument in controlling liquidity.

It is difficult to isolate the proximate causes of other short term factors which affect the size of the multiplier. By definition, the multiplier changes if the reserve:deposits ratio or cash:deposits ratio change. Detailed empirical studies could in principle determine private agents' short run preferences over holding cash and different types of deposits, utilising monthly data where available. A limited discussion of money demand functions follows later in this paper, and in common with other research finds money demand functions stable and well behaved. Similarly, factors which affect the level of commercial bank holdings of reserves could be looked at. These issues are not addressed for lack of space.

Stability of Asset and Liability Multipliers

The stability of the money (liability) multiplier contrasts quite sharply with the previous discussion of the asset (credit) multiplier and the weakness of the relationship between refinancing and credit. The principal reason for this apparent anomaly is that the assets approach is rather partial in application; it does not consider the net foreign asset position of the central or commercial banks. Both can fluctuate widely (and independently because there are no restrictions upon capital movements) and this may break the link between refinancing and credit.

At the Central Bank, refinancing levels are affected by the level of foreign reserves (or endogenously determined), to the extent that there is a constraint upon how far reserves can rise or fall. This constraint applies somewhat assymetrically, as there is a reserve "floor" (discussed in the section on monetary stance) at which refinancing expansion becomes restricted[34]. So

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[33] It is not clear if these deposits originated directly from commercial banks or other depositors.

[34] In theory the reserve floor is at 20 per cent gross foreign asset coverage of sight liabilities, in practice rather lower.

reserve shortages can reduce the level of refinancing independently of factors influencing commercial bank lending, whilst abundant reserves (or export boom) may have the opposite effect.

In a similar way, reductions in commercial banks' net foreign asset positions (funding increased domestic lending from a parent bank) may be unconnected to the Central Bank's refinancing policy at that time. In this case, domestic credit can move independently of the level of refinancing.

In summary, the money multiplier analysis is a useful tool for medium term monetary management. The relationship between the monetary base and broad money appears to be stable over time. Changes in money supply over the medium term are predominantly a result of changes in the monetary base. Changes in the multiplier usually partially offset changes in the base, and are trended. If money demand is stable (as argued later), the multiplier approach is a useful guide to estimating the required monetary stance of the monetary authorities. Although the level of foreign assets and desired domestic refinancing can be programmed to be consistent with the growth in the monetary base, the actual outcomes will be determined by the outcome on the balance of payments.

Credit to Government

Table 15 shows components of total consolidated public sector borrowing from all sources. Consolidated public sector accounts are a broad measure of the public sector including surpluses of public enterprises and stabilisation operations, social security operations and public enterprise expenditure as well as central and local government.

With central government the key economic policy maker in Côte d'Ivoire, the consolidated public sector grouping allows government a greater degree of freedom in bypassing limits set on borrowing by the Central Bank. Between 1980 and 1987, the Central Bank was the source of about half of government's domestic borrowing, and only 15 per cent of total financing. Public sector borrowing from domestic banks is as important as central bank financing, and has become more so in 1988 and 1989. Whilst trading accounts and other similar current transactions accounts will account for a portion of this borrowing, two sidestepping borrowing strategies are possible via the commercial banks: firstly rural refinancing, eg for a stabilisation fund which also has a food subsidy policy, which directly increases the monetary base, or secondly, and more indirectly by parastatal borrowing to cover transfer shortfalls. In both cases the effect could be to crowd out the private sector access to credit.

Table 15: Financing sources for Government Deficit 1980-87

Consolidated Public Sector CFA Billions

Year	Total Deficit	Financing Foreign	BCEAO	Domestic Banks	Nonbank
1980	272.0	176.0	73.4	42.6	-20.0
1981	267.0	152.0	74.7	28.3	12.0
1982	379.0	282.0	-4.8	125.8	-24.0
1983	242.0	32.0	120.4	25.6	64.0
1984	108.0	187.0	35.1	-42.1	-72.0
1985	58.0	92.0	-11.4	-36.6	14.0
1986	56.0	64.0	-2.8	1.8	-7.0
1987	139.0	76.0	-43.2	64.2	42.0
			Percent of Total		
1980		64.7	27.0	15.7	-7.4
1981		56.9	28.0	10.6	4.5
1982		74.4	-1.3	33.2	-6.3
1983		13.2	49.8	10.6	26.4
1984		173.1	32.5	-39.0	-66.7
1985		158.6	-19.7	-63.1	24.1
1986		114.3	-5.0	3.2	-12.5
1987		54.7	-31.1	46.2	30.2

Note: Foreign financing on cash basis.

Source: World Bank (1988).

Estimating Demand For Money [35]

The quality of available macroeconomic data required for econometric estimation of money demand in Cote d'Ivoire is highly unsatisfactory in several respects, which bring into question the validity of almost any econometric results:

* Quarterly macroeconomic data series are not readily obtainable. To circumvent this problem Medhora (1987b) constructs a proxied quarterly GDP index for a short period, but this does not deal with seasonality in the series. The Ministry of Economy and Finance in Côte d'Ivoire utilises power consumption as a proxy for short term macroeconomic

[35] The technical parts of this section, and estimated equations are in the appendix.

movements in output, although this is not necessarily covariant with output (except possibly in manufacturing).

* Data are subject to wide margins of error. The retail price index, for example, is based upon a 1960 consumption basket.

* Time delays in producing recent years' data. Data for up to five or six years past are frequently estimates.

* Additional difficulties for demand for money estimations are the limited number of annual series stretching more than 20 years and the anticipated low influence of interest rates in the light of extensive administrative intervention and regulation of money and credit markets.

To summarise the results shown in the appendix (on annual data):

* Real narrow and broad money aggregates were significant positive functions of real income. Broad money demand also responded positively to the rate of income growth.

* Generally broad money demand was sensitive to interest rates. Increases in real and nominal rates resulted in reduced money demand. Inclusion of a time trend variable tended to substantially lower the significance of the interest rate variable. As the discount rate is administratively set and rarely changed, its impact upon money demand was likely to be low. In World Bank (1988) money demand is shown to be sensitive to differences between French and Ivorian money market rates.

* A partial adjustment mechanism did not greatly improve the equation performance, suggesting that money demand responds rapidly to changes in the economy.

Equation 4 in the appendix is the "best fit" equation, showing that real money demand is a function of lagged money, current real income and real income growth. The real rate of interest (discount rate) has a negative (but insignificant) effect upon money demand. The inclusion of the income growth variable suggests that (unanticipated) income shocks have substantial effects upon real money demand. Overall, there was no evidence to suggest that money demand was particularly unstable over time and that income was the most important determining variable. Money demand projections could therefore be made on the basis of income growth estimates.

The Foreign Sector

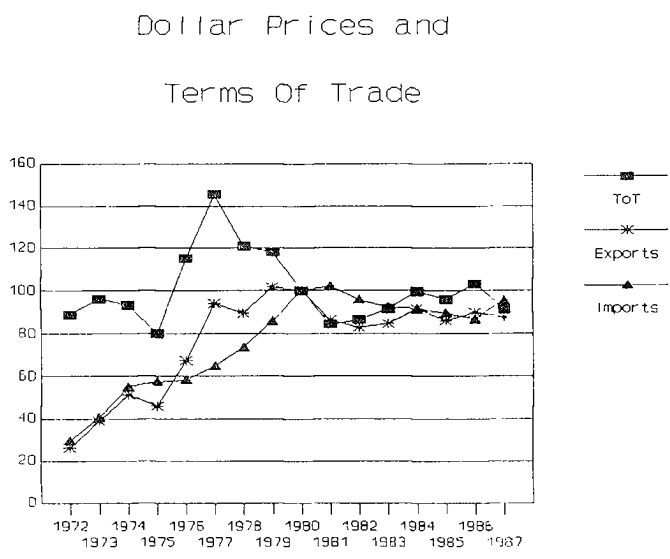
To the extent that current account deficits can be financed externally, as had been case for Côte d'Ivoire while it was considered a credit-worthy country, they are not really our concern here as they do not directly influence the money supply.

But the mechanism by which changes in primary exports prices and volumes affect monetary variables is of interest, as is the unfinanced (externally) part of the current account deficit. These two issues link up in the 1980s as commodity prices have fallen and current account deficits have not been financed by foreign capital, apart from 1984-86, causing a reduction in reserves and an overall contraction in money supply.

A source of considerable instability in the monetary system is from changes in the terms of trade. In particular the fluctuating price of exports, more than 80 per cent of which are non-fuel primary products.

Figure 6 shows the relative price effects on merchandise trade with the strong improvement in terms of trade over the 1976-79 largely resulting from higher cocoa and coffee prices. These "windfall gains" in export earnings as described by Davis (1983) did not, however, translate into an accumulation of foreign reserves. Rather, they allowed a rapid increase in the volume (see Figure 7) and value of imports from 1977 to 1981. Bhatia (1985:p31) notes that a voluntary reserve deposit arrangement between the BCEAO and CAA operated during 1977-79 to partially sterilise the rapidly rising liquidity of the banking system at this time. Despite the voluntary deposit scheme for export proceeds, domestic credit to both government and the private sector increased rapidly during this period permitting the resultant rapid import growth.

Figure 6:



1980 = 100

The foreign sector also affects capital account transactions via the extensive links of the major domestic banks and foreign banking sector with banks in France, together with the relative ease of effecting capital transactions. The previous discussion of private transfers, concluded that there was a diversion of saving away from the domestic market. Many employees in the financial sector reported that such capital movements were a well established phenomenon. The likely incentives for outward capital movement, apart from portfolio diversification, include the usually negative interest rate differential between French and Côte d'Ivoire deposit rates and uncertainty over the future of the pegged CFA Franc exchange rate (ie anticipated devaluations).

The previous section noted the sensitivity of money demand to the Côte d'Ivoire:French money market rate differential rather than the level of Côte d'Ivoire rates. Transfers abroad can be described as capital flight if they evade the system of authorisation operated a department of the Ministry of Finance on transfers over CFA 175,000, or leave by abuse of systems for payments of imports such as over-invoicing. A significant portion of the leakage of domestic savings into foreign exchange is however likely to be entirely legitimate.

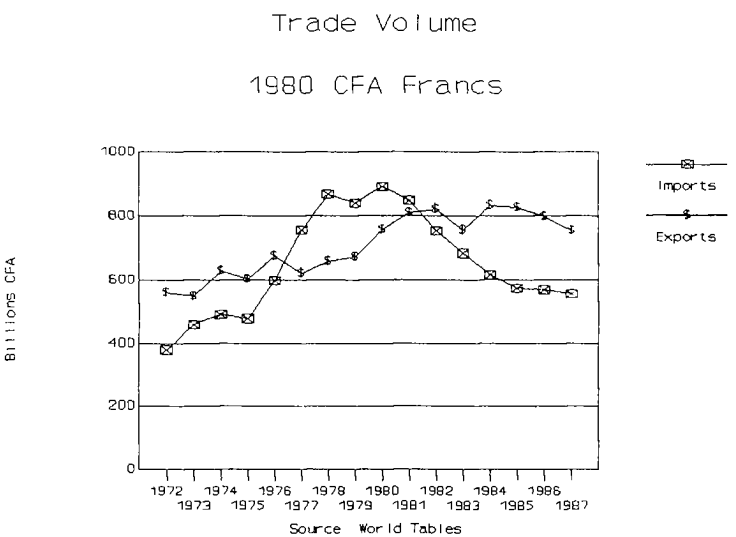


Table 16: Foreign Sector - Summary Data

Bn CFA

Year	1980	1981	1982	1983	1984	1985	1986	87
Net External Assets	-131	-162	-30	-142	41	105	8	- 33
Trade Balance	84	100	183	164	497	548	545	337
Exports	636	662	771	787	1146	1229	1108	841
Imports	552	562	588	623	650	681	563	504
Export Values:								
Coffee	136	121	152	159	183	278	231	na
Cocoa	167	200	163	163	397	398	385	na

Source: World Bank 1988.

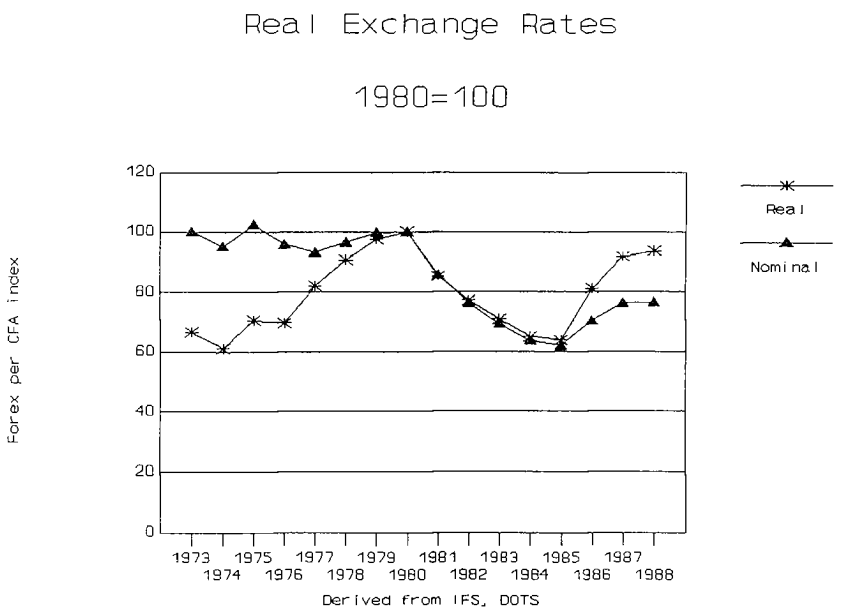
Real Exchange Rates

Some of the complexities of the many influences upon the foreign sector can be clarified by an analysis of real effective exchange rates (REERs). These are shown together with nominal effective rates in Figure 8 for the period 1973 to 1988. An increase in the index represents an appreciation.

The real effective rate is a trade weighted basket of exchange rates which are corrected for differences in domestic and foreign cost or price inflation rates. A rise in the REER can be interpreted as an decrease in international competitiveness (see Dornbusch and Helmers (1988) for a more detailed discussion of the significance of the real exchange rate).

Despite the fixed exchange rate with France, between 1980 and 1985 there was a fairly sizeable nominal depreciation of the CFA (largely against the dollar). Real rates also depreciated as domestic price inflation was comparable to that in trading partners. The real depreciation enabled an improvement of the trade balance, particularly from 1981, largely as a result of import compression. The real appreciation of the CFA in 1986 and

Figure 8: Côte d'Ivoire Real and Nominal Effective Exchange Rates.



1987 was closely matched by a deteriorating balance of trade[36]. An appreciation of the real exchange rate, can occur if the relative price of nontradables to tradables increases, which strengthens the home demand for tradable products. With a fixed exchange rate, the REER can only be devalued by engineering relative reductions in non-tradable prices. In practice this can be achieved by indirectly affecting the prices of imports and exports via tariffs and subsidies, or by maintaining a lower rate of domestic to foreign inflation[37].

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[36] Krumm (1987) points to the difficulties of an overvalued exchange rate and the obstacles created by the lack of a direct instrument to change domestic prices relative to international prices.

[37] These relationships are discussed in more detail in a forthcoming paper on monetary policy and exchange rate determination.

Government policy for the 1986-1990 period stressed the need to change the terms of exchange between tradable and non-tradable sectors and to reorient resources to export sectors[38].

Although Côte d'Ivoire does not have a direct instrument to alter the real exchange rate, two policies have been followed in pursuance of these objectives:

* From 1986, a scheme which emulated exchange rate changes by the import tariffs and export subsidies method was introduced on the advice of the World Bank. The actual administration of the scheme has highlighted serious difficulties of real exchange rate changes under a fixed rate, most notably in enforcing import tariffs and financing export subsidies. The real appreciation of the CFA Franc from 1986 (using an index that takes account of tradable: non tradable prices) is an indication that the scheme has not altered the effective exchange rate substantially. One particular problem has been that exporters have not received the export premium, due to the precarious fiscal position of the government.

* The second strand of real exchange rate management has been restrictive monetary policy to restrain domestic prices, which was followed from 1985 onwards. Although price inflation in Côte d'Ivoire was modest and the monetary stance was in general contractionary, inflation in trading countries fell considerably over the same period, whilst the French Franc appreciated against the US$, the key international trading currency in which most primary product exports are denominated.

Policymakers in Côte d'Ivoire have found themselves without an instrument to alter the real effective exchange rate, primarily due to the fixed nominal rate regime of the West African Monetary Union. That substantial real exchange rate changes can take place in an open economy with few controls upon capital movements is mainly because of to the existence of the *compte d'operations* which allows persistent overvaluation of the exchange rate accompanied by an increasing overdraft at the French Treasury. The benefits of this mechanism are discussed in the final section. Without this mechanism, Côte d'Ivoire would have been forced to devalue due to exhaustion of foreign reserves, or to impose exchange restrictions to ration foreign exchange.

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[38] See *Côte d'Ivoire Selection*, 1988.

5. REAL ECONOMY EFFECTS OF MONETARY POLICY

As a first step towards assessing the real sector effects of monetary policy, this paper has tested the hypothesis that bank credit to the private sector is used to finance working capital. There are some substitutes for domestic bank credit such as borrowing from an overseas parent company and internal funds but these are limited. There is no short term company paper market, whilst access to finance from the stock market is restricted to well capitalised large firms. Consequently we can assume that firms are heavily dependent upon bank credit, such that credit restrictions could have real effects upon output by reducing the availability of working capital and reducing the level of capacity operation.

Discussions with bank officials[39] in 1989 indicated the heavy reliance of commercial firms upon bank overdraft credit in situations of tight banking sector liquidity. To illustrate the level of credit demand by commercial concerns, it is interesting to note that personal overdraft facilities had been completely withdrawn in several banks to create additional liquidity.

Quarterly constant price production indices for eight industrial sub-sectors in the period 1982-87 [40] were employed as indicators of output with corresponding quarterly credit data as reported to the *Central des Risques*[41] at the Central Bank. The production index was specified as a function of short-term credit lagged by one quarter, and medium and long term credit by one to three quarters lagged.

Regressions on both a sector and pooled time-series basis for any of the industrial sub-sectors did not show a significant relationship between lagged credit, whether short, medium or long-term or total credit, and output as specified above. The weakness of these conclusions allows several alternative assumptions to be postulated:

* Bank credit may not be an important part of working capital. Company results for 1984 from the fifty largest companies in Côte d'Ivoire (*Bulletin de l'Afrique Noire*, 1988) show that total net losses of CFA 97 billion were financed by a

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[39] Discussions were held by the author with senior bank management staff of several major commercial banks and overseas bank's agencies based in Abidjan.

[40] The sub-sectors were: Food,drink,tobacco processing; textiles and leather; wood products; chemicals; non-metallic mineral products; base metal products; other manufacturing industry; water,gas,electricity.

[41] These data are reported to the Central Bank by commercial banks for all loans of over CFA 10 million. Coverage is generally around 90 per cent.

drawdown of cash reserves (deterioration of cashflow) rather than by debt increasing substantially.

* The marked slowdown of credit growth 1984-86 (and contraction in 1984) was a result of both supply and demand factors, not adequately explained by supply side credit constraints. Whilst the banking system's liquidity shortage was clear, as shown by a low cash ratio and high loans to deposits ratio, extended recession and drought has reduced the number of creditworthy borrowers. In 1984, electricity shortages could also have contributed to credit demand reductions, but as production would also have been affected, the credit to output relationship is unlikely to have been affected.

As Table 17 shows, changes in credit have not always corresponded with output. For primary, secondary and tertiary sectors, changes in the proportion of total credit allocated and changes in the share of GDP did not vary significantly when comparing 1980-82 with 1983-85. Changes during the 1986-88 period show that credit and output shares generally moved in opposite directions. The increase in the share of tertiary credit (58.1 to 65.8 per cent) accompanied by a fall in the share of output, can largely be attributed to the increase in crop-financing credit required for stockpiling, despite the sharp contraction of the sector during 1987.

Table 17: Sectoral Credit and Output Shares

Sector	Per Cent of:	1980-82 Average	1983-85 Average	1986-88 Average
Primary	Credit	6.9%	6.4%	3.9%
	GDP	32.7%	31.5%	32.7%
Secondary	Credit	34.9%	35.5%	30.3%
	GDP	21.2%	20.1%	22.4%
Tertiary	Credit	58.2%	58.1%	65.8%
	GDP	46.1%	48.5%	44.9%

Note: Shares of GDP adjusted to exclude non-marketed sector.

Sources: *Ministere de l'Economie et Finances* (1988) and BCEAO, *Notes et Statistiques* (various).

In the secondary sectors, a credit contraction (particularly to manufacturing) was accompanied by a slight improvement in GDP share, although little real improvement in the output share.

One feature which may explain the opposite movement of credit and output shares is that credit contraction has been predominantly in medium and long term credits. Between 1980 and 1988, medium-term credit fell CFA 224 billion to CFA 187 billion (31 to 20 per cent of total credit) and long-term credit fell from CFA 45 billion to CFA 37 billion (7 to 4 per cent of total credit).

This reduction of longer term financing instruments has been a reflection of changing Central Bank policy on the type of rediscounting made available. During the 1980s, it has reduced access to the long term rediscount window and replaced it by short-term borrowing from the money market. The effects of credit contraction could be expected to be a maintenance of output owing to the continued avaiability of short term working capital, but more prominent output effects in the longer term as growth prospects are reduced by lowered access to development capital.

At the sectoral level an interesting feature of credit allocation is that credit to the primary sector (80 per cent to agriculture) has declined substantially (from CFA 43 to CFA 32 billion) between 1980 and 1988 yet the share of agriculture in GDP has remained fairly constant. Between 1983 and 1988 credit to the primary sector halved in nominal terms yet its GDP share increased from 30.6 per cent to 34.0 per cent.

Although crop financing is excluded from primary sector credit, the low level and decline in the proportion of credit to the primary sector without a corresponding fall in output is evidence of a considerable degree of autonomy from the operations of formal credit markets. The presumed access to informal finance, or more plausibly in view of the earlier conclusions, auto-finance, has enabled a reduction in formal credit and a healthy insulation from monetary policy actions.

Public and Private Sectors

The distribution of credit between public and private sectors has fluctuated widely beween 1980 and 1988. In 1980, outstanding credit to public enterprises was CFA 226 billion (31.5 per cent of total reported credit). Over the next four years, outstanding credit fell sharply to CFA 70 billion, reflecting the initiatives taken under adjustment programmes to address financial problems in the most important paratstatals. By 1988, this credit had risen again to CFA 209.8 billion (22.5 per cent of total credit), at least in part reflecting the renewed deterioriation of the fiscal deficit creating pressures on the level of transfers to, or profits remitted from public enterprises.

A weakly negative correlation is observed between the level of credit to government (net domestic bank financing) and net credit to public enterprises suggesting a certain degree of substitutability between the two types of credit. Therefore the rapid shifts in the allocation of credit to public enterprises may have been offset to some extent by a more direct financing role for the central government.

6. EVALUATING MEMBERSHIP OF THE UMOA

Participating in the UMOA is a political decision, and, as Allechi and Mamadou (1989) note, the fact that the *compte d'operations* is located at the French Treasury and not the Banque de France underlines the political nature of the mainstay of convertibility in the UMOA. Whilst the merits and demerits of French political and economic links are largely beyond the scope of this working paper there are certain aspects of the UMOA by which Côte d'Ivoire undoubtedly gains and others where the benefits are less clear. During the 1980s the benefits of UMOA membership which had been previously identified were less readily obvious.

Costs and Benefits

Until the early 1980s, the prevailing view has been that Côte d'Ivoire was an economic success story. Therefore it was not surprising that research concluded that the distinctive monetary arrangements of the UMOA had a part in this success, or, at least that the monetary arrangements had not hindered development.

Previous research on the costs and benefits of belonging to the Franc Zone or to the UMOA and studies of Côte d'Ivoire have generally concluded that overall the arrangements provide a net economic gain. However the economic stagnation in Côte d'Ivoire since 1980, together with the more recent currency over-valuation resulting, in part, from commodity export price falls, should raise doubts about this received wisdom.

Jakobeit (1985) argues that it is difficult to quantify the benefits of Franc Zone membership or to isolate them from other economic factors. However he suggests that the eagerness of neighbouring countries (for example Nigeria and Ghana at different times), to join one of the French-speaking monetary unions indicates the net perceived benefits of membership. The most evident benefit of membership to many neighbouring African countries, whose currencies are inconvertible and subject to extensive exchange restrictions, would probably be that of exchange convertibility. It is not sufficient however, to judge the UMOA arrangements as somehow 'better' or more conducive to development on the basis of neighbouring countries perceptions. This is because their perceptions may be misguided or selective and also because the effects of UMOA membership are not necessarily the same for each country member, particularly as openness, trade destination and composition can vary widely amongst UMOA members[42].

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[42] One example of country differences is significantly divergent real exchange rates. Macedo (1989:p357) shows the considerably different trends in Senegalese and Ivoirian real exchange rates.

Growth Performance

Guillaumont, Guillaumont and Plane (1988) utilising pooled cross sectional data for sub-Saharan African (SSA) countries argue that Franc Zone membership has a significant positive effect upon a 'catch all' economic policy variable. Consequently they conclude that Franc Zone membership has resulted in higher GNP growth rates after taking account of exogenous growth creating or inhibiting factors. This conclusion is particularly strong when comparing the GNP weighted mean of Franc Zone countries with other SSA countries in the period 1970-81. Factors which they attribute to the policy induced higher growth performance are: guaranteed exchange convertibility; monetary discipline and a less overvalued exchange rate during this period. These variables are not used as independent variables in the estimations carried out.

Devarajan and de Melo (1987) also demonstrate significantly higher CFA-zone growth rates than in other SSA countries during the period 1960-82 without controlling for exogenous effects. There is a significant improvement in the growth performance of CFA-zone countries against most comparator groups of LDCs when comparing the 1973-82 and 1960-73 sub-periods. This result suggests that the 1973 monetary reforms in the CFA-zone were helpful in minimising the costs of rapidly changing oil prices.

Since 1981 however, the situation for Côte d'Ivoire has changed considerably; economic growth slowed down (real growth was negative in 1983, 1984 and 1987), from 1983 restrictive credit policies were required to prevent deterioration in the foreign asset position, and sharp import compression occurred to reduce the current account deficit which could no longer be supported by inward capital flows. Although this balance of payments adjustment process was supported by a depreciating real exchange rate between 1980 and 1985, the lack of control of the exchange rate instrument became noticeable once more as the rate appreciated from 1985 onwards (Figure 8) and began to place pressure upon the level of reserves and the current account balance.

Table 18 shows how significantly Côte d'Ivoire's relative growth performance has changed during the 1967-1987 period. Whilst a more sophisticated analysis is required to isolate the effects of monetary policy regime variables upon growth certain noticeable changes have taken place:

* The data are consistent with the hypothesis that growth in Côte d'Ivoire up to 1980 compared favourably with other developing country groupings over substantial periods of time. Ivorian growth in the 1967-73 and 1973-80 periods was clearly higher than the low-income Africa, sub-Saharan Africa and all developing countries weighted averages. Favourable comparisons can also be made against bouyant oil exporters such as Nigeria.

* Comparison of Côte d'Ivoire and Senegal, the two largest economies in the UMOA, dispels the notion that there is necessarily a process of convergent growth rates within the monetary union.

* From 1980, Côte d'Ivoire's growth performance declined markedly, and more rapidly than in low income africa, sub-Saharan Africa or the developing country average. Ivorian performance is certainly not markedly better than those of the displayed country groupings, as had previously been the case.

Table 18: Cote d'Ivoire and Country Groupings GDP Growth

	GDP Growth pa			
Country/Group	1967-73	1973-80	1980-86	1987
Cote d'Ivoire	8.5 a	7.0	1.2	-3.9
Senegal (UMOA)	-0.3	2.1	3.2	6.2
Nigeria	6.9	9.6	-3.2	-3.6
Low Income Africa	3.2	1.2	1.4	2.9
Sub-Saharan Africa	5.6	3.3	0.4	-1.3
All developing economies	6.5	5.1	3.1	4.4

Notes: a 1965-73.
b Group figures are GDP weighted averages.
c Period Growth rates computed by least squares method.

Sources: World Bank, World Tables (1989) and World Bank, World Development Report (various).

Inflation

In respect of Côte d'Ivoire the World Bank (1988:p14) summarise the prevailing opinion:

" UMOA membership ..... seems to have served Côte d'Ivoire well. As a result of monetary discipline, the Ivorian economy did not suffer from the major upheavals and hyper-inflation observed in other African countries as well as in some Latin American countries whose economies resemble that of Côte d'Ivoire in many respects."

Inflation has indeed been moderate, only rising once above 20 per cent since independence, and in single digits since 1981. Although membership of a monetary union is likely to be an important factor in maintaining low inflation rates, it is a separate issue whether this necessarily confers considerable benefits. We consider these issues in turn, arguing that inflation is likely to be lower than otherwise would be the case, but that nominal exchange rate rigidity can reduce the benefits of low inflation.

The bulk of this working paper has been concerned with the working of the rules of the UMOA. The most important rules are: the size of the *concours globaux* (refinancing), the level of credit to the treasury and maintainance of a target level of foreign reserve coverage at the local agency of the BCEAO. Despite some shortcomings, the basic thrust of BCEAO monetary policy is counter-inflationary, and the rules of the BCEAO are designed with this objective in mind. It is clear that these rules have not always functioned ideally. For example, the announcement during 1989 of the abandonment of sectoral credit allocation is official recognition that policy instruments can be ineffective.

In the lexicon of the "rules versus discretion" literature on the theory of economic policy [see, for example, Kydland and Prescott (1976) and Barro and Gordon (1983)], the anti-inflationary policy followed by the BCEAO has been both rule-based and a credible monetary policy[43].

The rule followed is that money supply should be expanded with reference to the level of foreign reserve coverage (see section 3). There are two reasons why this is a broadly credible non-inflationary policy, despite the obvious difficulties experienced in the attainment of monetary objectives:

* The BCEAO agency has no particular incentive or statutory authority during the course of the year to deviate intentionally from its policy.

* Government cannot resort to rolling the printing presses to automatically monetise fiscal deficits.

Three facets of the UMOA have been important in sustaining this credibility. Firstly, the supranational authority of the UMOA, where important decisions are made by simple majority or unanimity of opinion in member states. Secondly, the legal right of refusal of credit to government. Thirdly, the fixed exchange rate to the French Franc. All these features are important in

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[43] A credible monetary policy is defined as one in which the monetary authorities are perceived not to have an incentive to deviate from announced policy objectives (ie to make inflation surprises, real wage falls and employment increases).

preventing the emergence of inflationary pressures. By way of example, Sargent (1981) identifies the same three factors of: an independent central bank, the right of refusal of credit to government and a gold standard or fixed exchange rate, as being instrumental in stopping four major hyperinflations in other countries.

Despite low inflation, particularly during the 1980s, Côte d'Ivoire has experienced substantial variation of its real exchange rate (Figure 8), noticeably a sharp appreciation since 1985. A French Ministry of Cooperation report (Thill,1989) argues that overvaluation of the CFA relative to other neighbouring currencies, particularly those of Nigeria and Ghana, is undermining CFA country economies. This occurs through illegal cross-border trade into CFA countries, and price undercutting on world markets. As an indication of how far the exchange rate had moved from purchasing power parity by 1988, farm labourers wages paid in Côte d'Ivoire are more than three times greater than the Ghanaian equivalent in dollar terms[44]. Similarly, United Nations international comparisons of living costs for UN officials in US dollars[45] show the costs in Abidjan, Côte d'Ivoire to be higher than in Paris, and more than twice the level in Accra, and Lagos.

The two main reasons for the more recent exchange rate appreciation are appreciation of the pegged currency, the French Franc against the US dollar, and a fall in international currency prices of the major commodity exports, cocoa and coffee, which has not been reflected in the domestic price level. Because currency appreciation has occurred despite low inflation and fairly effective credit restraint, it is relatively straightforward to conclude that monetary policy is unlikely to be a complete substitute for exchange rate flexibility.

The reason that UMOA does not require exchange rate flexibility, ie independent alteration of rates against major world currencies, is that the reserve support given by the *compte d'operations*, which, by maintaining convertibility obviates the need for exchange control or alteration of the exchange rate. The need for exchange rate flexibility will therefore become both obvious and apparent at the time that the *compte d'operations* fails to deliver convertibility, notwithstanding the difficulties mentioned previously. Prior to this, the CFA could move away from a fixed official rate with the Franc (ie a parallel market rate could emerge), if difficulties are experienced with convertibility.

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[44] See *The Economist*,6 August 1988:p15.

[45] These are given in the March and September issues of the UN Monthly Bulletin of Statistics.

Pooling Reserves

One of the major benefits of the union, access to pooled reserves, has been eliminated in the late 1980s. Reserve requirements for a particular country for coverage of a particular level of imports are lowered as long as the covariance in (pooled) reserves of different countries is not zero. That is, if all countries' reserves move in step, there is no gain from pooling. World-wide economic stagnation has lead most of the UMOA to draw upon pooled reserves simultaneously, exhausting them and furthermore overdrawing significantly at the compte d'operations. During the 1980s Côte d'Ivoire has been by far the most substantial borrower. Without a credible restrictive policy to reverse reserve loss, the French Treasury is understandably concerned at the continued draw down of the *compte d'operations*. Whilst officially overdraft borrowing pays interest, there still remain prudent limits to access. This is particularly the case when Côte d'Ivoire commercial debt trades on the secondary market at around 10 per cent of face value.

Trade and Investment

The valuation of the trade and investment benefits of monetary unions [see Mundell (1961), Kenen (1969)] need not necessarily be positive or constant over time. During the stagnation of the 1980s in Côte d'Ivoire, the benefits are less evident. It is possible that monetary union provides incentives which lower foreign investment and entrench inefficient trading patterns.

Objectives such as attracting foreign capital are fundamentally concerned with real factors such as labour relations, productivity and growth prospects and current business confidence. The monetary regime can facilitate such flows but not deliver. For example in Côte d'Ivoire, private capital flows have certainly been negative since 1985 without any marked change in Franc Zone arrangements. Whilst this is not conclusive evidence, a fixed exchange rate and relatively stable monetary policy do not automatically imply net inward foreign investment. The lack of exchange restrictions has been seen as a considerable incentive to attracting foreign investment, but at the same time as business confidence slumps in Côte d'Ivoire, the lack of exchange restrictions can work in the opposite direction, not in the host country's favour.

The increase of intra-union trade has long been regarded as a probable development and benefit from the UMOA, despite the fact that monetary union is neither necessary nor sufficient for economic integration. Ouattara argues (1987:p6) :
" The existence of a common currency and the consequent absence of any exchange risk in transactions within the union has certainly facilitated border trade among the member countries, but it is also unlikely that the share of border trade within the Union has increased relative to border trade with non-union countries."

Trade flows (Table 19) show that Côte d'Ivoire trade with other members of the Franc Zone expanded slowly between 1972 and 1986. Exports to other UMOA countries increased from 5.5 per cent to 8.4 per cent of total exports but lagged behind the expansion of exports to other African countries. Conversely, the share of exports to the entire Franc Zone (France, the UMOA and the Central African Monetary Union) has fallen since 1972.

Imports from UMOA have risen more substantially from a 2.2 per cent share in 1972 to 7.3 per cent in 1986. Also the sourcing of imports from the Franc Zone has declined less rapidly than exports to the Zone.

Trade with France has declined substantially, the share of exports to France has halved whilst only 31 per cent of imports as against 47 per cent in 1972 are sourced from France. However trade to countries whose exchange rates are pegged to the Franc

or move within close margins to it (including exchange rate mechanism (ERM) countries from 1979) has increased since 1981. Although there is a slowly rising trend within UMOA, the rapidity of the decline of trade with France, which commenced well before the formation of the ERM mechanism, makes it difficult to come to firm conclusions on whether UMOA membership is sufficient to stimulate intra-Union trade. The World Bank (1989c) argue that convertibility is not a sufficient catalyst for promoting regional trade, citing the poor performance in the neighbouring customs union associated with countries in the central Africa Monetary Union. Other relevant factors would include factor mobility and exchange rate flexibility. We discuss these issues in turn.

Factor mobility

Following Mundell (1961), an important issue in defining whether a country is in an optimum currency area, is that factors of production should be mobile within the area but immobile internationally. This may allow more rapid non-inflationary growth by easing factor shortages.

Côte d'Ivoire is an important regional labour market and approximately 25 per cent of the population are immigrants, largely from Burkina Faso, Ghan and Mali. There are also French skilled workers and Lebanese traders. Significant amounts of cash flow as remittances to other UMOA and non-UMOA countries, as can be determined from inter-agency movements of banknotes within the UMOA. Whether it is part of an optimum currency area however is more difficult to ascertain as the West African region has a tradition of large scale movement of people. As UMOA is not a unified geographic block, and labour movement takes place with non-UMOA countries such as Ghana, it appears that the geographical extent of UMOA is determined, not by factor mobility, but common historical links. The extent of monetary transfers between UMOA states for trade and workers' remittances (the factor mobility argument for union) also suggests that there

Table 19: Cote d'Ivoire - Trade Shares

Exports	1972	1976	1981	1986
EEC	63.4	61.3	54.7	59.3
of which FRANCE	29.1	25.4	18.6	14.2
AFRICA	11.2	11.9	17.2	15.6
of which UMOA	5.6	5.0	7.3	8.4
US	13.9	10.5	11.5	10.5
OTHER	11.4	16.3	16.6	14.6
TOTAL	100.0	100.0	100.0	100.0

Imports	1972	1976	1981	1986
EEC	73.2	61.3	59.1	54.7
of which FRANCE	47.1	38.4	31.1	31.0
AFRICA	8.8	11.9	7.8	17.2
of which UMOA	2.2	5.0	1.6	7.3
US	6.1	10.5	7.4	11.5
OTHER	11.9	16.3	25.7	16.6
TOTAL	100.0	100.0	100.0	100.0

Memorandum:	Franc Zone and ERM (*)			
Exports	34.7	30.5	56.4	59.5
Imports	49.3	43.4	47.0	57.3

Note: (*) EMS countries from 1981
Source: BCEAO, *Notes et Statistiques*.

are considerable benefits from a regional currency, but not necessarily at the current pegged rate to the French Franc.

Exchange Rate Arrangements

In the long run a political decision may be made to increase the competitiveness of the CFA Franc, and so limit the drain on the *compte d'operations,* by increasing the flexibility of the exchange rate. This would require renegotiation of the UMOA statutes and unanimous agreement from UMOA states and France. Several options are available:

* A new devalued fixed rate against the French Franc, either for the UMOA as a whole or for individual countries at different rates. Differing exchange rates would increase the incentives for monetary expansion in individual countries to maximise their use of pooled reserve. This is likely to remove the potential for the benefits of pooled reserves, as the central banking agency would have less control on individual country monetary policy and a free rider problem could emerge. There is now an emerging concensus on the importance of an appropriate exchange rate structure. The World Bank (1989c: p160) obliquely refers to this by stating "Currency convertibility and capitla mobility are important for sustainable increases in regional trade but are not sufficient."

* An alternative would be to introduce a new type of peg. As the French Franc is already a member of the European Exchange Rate Mechanism, where realignments to other member currencies are increasingly infrequent, the CFA Franc is already nearly *de facto* pegged to the ECU. A switch to an ECU peg could be carried out simultaneously with a devaluation. The problems with an ECU peg in the longer run will be similar to the present Franc peg. Monetary restraint will be essential to avoid inflation and hence overvaluation of the exchange rate. A secondary problem would be distancing the agreement of non-France EMS members to support ECU-CRA convertability.

If the European Monetary Union is achieved in the 1990s, European inflation could fall even lower, which will require greater CFA monetary discipline. The present monetary instruments in Côte d'Ivoire do not appear to be able to achieve that level of control, particularly in the face of primary product price fluctuations. Alternative pegs could take account of trade composition and prices, or currency composition of trade. Both measures would result in an increased weighting for the US dollar and regular exchange rate changes.

* Given the reluctance of many parties to move away from a French Franc peg, the possibility of independent floating for the CFA seems remote. There are also no developing country precedents of movement from a single fixed rate to

sustained free floating. There are however, examples of changes to a crawling peg.

7. CONCLUSIONS

For nearly twenty years after independence the monetary arrangements in Côte d'Ivoire functioned well, permitting low inflation and stable economic growth. Membership of the West African Monetary Union was an important factor in achieving these objectives. Confidence in the value of the domestic currency was encouraged by the fixed exchange rate and guaranteed convertibility with the French Franc.

Several factors combined to give an impression of fairly effective monetary management. Firstly, rapid economic growth allowed a corresponding increase in money supply, without creating excess demand for demand for goods and accompanying inflationary impulses. Secondly, credit to government from the domestic banking system was effectively limited by UMOA statutes, which eliminated a significant source of money creation. Thirdly, finance was readily available in foreign currency, in part due to the convertibility of the CFA, which also reduced the pressure on domestic credit expansion.

By the late 1970s, as economic growth slowed, some of the shortcomings of monetary policy instruments were more apparent. Ineffective use of monetary control instruments coincident with rapid export-based economic growth had permitted accelerated monetary growth, increased price instability, an over-valued real effective exchange rate and the emergence of large financial imbalances in the balance of payments and government operations.

Although the rapid monetary expansion in the 1970s had an external origin, owing to the dependence of the economy upon exported agricultural products (cocoa, coffee) whose prices fluctuated widely, it is clear that the monetary instruments of the Central Bank could not have been as effective in curtailing demand as they were to be in the 1980s. This was because the most important control instrument, the refinancing operation of the Central Bank, is not very effective at times of rapid liquidity growth because of concurrent shifts in the proportions of financial assets held towards less liquid assets. Individuals and firms moved from holding cash towards bank deposits, which permitted commercial banks to expand credit rapidly and reduced their reliance upon Central Bank financing. Commercial banks also have access to borrowing from foreign parent banks, which is beyond the control of the Central Bank in the absence of exchange controls.

The renewed application of restrictive monetary policy, during a prolonged period of adjustment in the 1980s, has contributed to price stability and a reduction in the fiscal and trade deficits. Credit policy has been more restrictive and closer to Central Bank objectives. However, the provision of subsidised credit to finance export crops, effectively without limit, has always meant that credit policy has not been as restrictive as intended.

There is little evidence to separate the effects of general economic stagnation from those of restrictive credit policies. Although there have been substantial movements in credit allocation towards financing agricultural exports and stockpiling, and away from medium and long term credit to short term refinancing, there is little observed correlation with output movements. The agricultural sector in particular appears to be more insulated than other sectors from the general stance of money and credit policies. This observation is somewhat contradictory to the evidence presented that informal rural finance performs essentially an intermediary role for formal institutions, unless rural credit is used for consumption purposes only. The implication is that much of the rural sector is self-financed, and not reliant upon formal or informal lenders to finance productive activities.

Access to international financial markets is unlikely to open up for the foreseeable future following a debt moratorium announced in 1985 and more recent payment delays, thus the emphasis of monetary policy in the 1990s is likely to be upon improving domestic savings mobilization. This is particularly the case as the banking system has not been instrumental in increasing domestic savings mobilisation. Domestic and national savings rates have fallen and there is evidence of continued outward flows of private savings. In part, this is due to the lack of incentives to mobilise deposits which result from generous central bank provision of refinancing facilities with guaranteed profit margins. Also there is little evidence that commercial banks have made a significant effort to mobilise rural savings or provide savings instruments to small savers. Improving incentives to mobilise deposits, by for example tying refinancing to deposit mobilization, would improve the likelihood of more differentiated instruments and better service provision.

There is little evidence to suggest that monetary and financial policy has stimulated financial development, because the prime concern has been to maintain stability. Increases in financial deepening have been closely associated with income growth and not financial reform. If the private financial sector is to offer a wide range of financial services and instruments, some diversification from the present concentration of financial assets in the commercial and central bank sector would be beneficial. Whilst there are a number of emerging bank and non-bank institutions, their development could be accelerated by legislative changes. Financial innovation could occur at both ends of the spectrum of sophistication: There is considerable scope for mobilising informal savings in the traditional sector. The sizeable modern sector in the Ivorian economy does not have access to sources of financing/saving such as short term government and commercial paper whilst equity financing could be developed with reforms of the currently restrictive stock market. In the longer term, the development of security markets could also supplement the refinancing instrument of monetary control.

Several aspects of Central Bank intervention in credit markets appear less than effective. Refinancing operations have limitations in controlling broad money aggregates, as mentioned above, and discourage saving. The liquidation of many development-type banks during the 1980s also suggests that refinancing operations may have allowed political lending considerations to override commercial concerns of loan repayment. Sectoral credit allocation policies, such as sectoral lending coefficients and prior authorisation have not worked. Priority sectors have low and falling levels of credit. The most obvious reform of the current system would be to introduce more flexibility in interest rate setting to replace administrative decision. This could be achieved by allowing commercial banks to trade directly with each other in the inter-bank money market. UMOA rules however prevent increased flexibility for interest rate setting, unless the agreement of partner countries is obtained, so the BCEAO could play a coordinating function at an international level.

The net benefits of UMOA membership are now no longer as clear as they were in the 1960s or 1970s. Côte d'Ivoire is caught in a low growth, tight monetary policy environment due to an adverse external circumstances, and the evidence points to an overvalued real exchange rate which strengthens the argument for a restrictive monetary policy.

Abandoning the fixed exchange rate peg will not be an easy decision to take, owing to the historical associations of stability connected to the arrangement and the uncertainty which change may create. Also, as with all devaluations, there will be gainers and losers from a change in the exchange rate in the short to medium term. Although monetary policy can be reasonably effective in achieving credit restriction to reduce inflation, externally determined exchange rate changes or international price changes can have a far greater economic impact than domestic monetary policy responses can achieve. With increased exchange rate flexibility Côte d'Ivoire could respond to fundamental exchange rate misalignment created by differential price movements, and, to a certain extent offset these developments.

Appendix : Estimating Money Demand

A simple partial adjustment function is utilised which minimises the number of variables and the number of transformed vaariables.

Real money demand is given as:

$$M/P_t = f\ (\ Y/P_t,\ M/P_{t-1},\ r_t) + u_t$$

where long run desired money holdings:

$$M/P^d_t = a_0 + a^1\ Y/P_t + a_2\ r_t + v_t$$

and with an adjustment mechanism

$$M/P_t = b\ M/P^d + (1-b)\ M/P_{t-1}$$

Retail Price Index is used as deflator, Y = GDP , M = cash + demand + time deposits.
r - interest (discount, TEN) rate.

Real income (Y/P_t) represents a scale variable for transactions money demand whilst the interest rate represents the opportunity cost of holding money. Being administratively set, the interest rate is unlikely to be an accurate reflector of the return on non-financial assets. However no alternative series was available for the real rate of return, so Central Bank discount rates were utilised.

A simple ordinary least squares regression relating money demand to current income and lagged money via a partial adjustment mechanism (not shown) provides a short run demand elasticity of 1.15 and long run demand elasticity of 1.37 with respect to income. The coefficient on income is different from zero at the 99 per cent confidence level while the coefficient on lagged money is not significantly different from zero at any meaningful confidence interval. The presence of a lagged dependent variable is likely to induce serial correlation, which appeared to be present from analysis of the residuals and overestimate the significance of coefficients[46] .

This equation suggests a considerable influence upon money demand of an income shock in the initial year, with minor effects in subsequent periods. To test the hypothesis that a high income elasticity reflects the process of monetisation and financial deepening undergone in Côte d'Ivoire a time trend variable was added (equation 1). The trend variable turned out to be significantly (at 95 % confidence) negative. This result could

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[46] The presence of serial correlation and a lagged dependent variable is sufficient to render the ordinary least squares estimation process biassed and inconsistent (Pindyck and Rubinfeld 1976 p147).

be explained by the sharp fall, and then stagnation, of real money demand in the 1980s. A preferable proxy variable for monetisation would be the number of banking offices, which would reflect the liquidations in the banking sector in the 1980s and the concurrent rapid growth of banking offices and money demand in the two previous decades.

Incorporating price expectations as: $\dot{P}^{e}_{t} = \dot{P}_{t-1}$ had no significant effect upon real money demand possibly showing its long term stability.

The coefficients on both real[47] and nominal interest rates are clearly significantly different from zero (at 95 % confidence) in several estimations (equations 2 and 3), and more so than in estimations by Allechi (1987). The coefficients are negatively signed, apparently reflecting the opportunity cost of other assets. As the discussion of financial markets made clear, Côte d'Ivoire is characterised by few alternate financial assets so interest rates in the banking sector should not be competing with closely substitutable assets (which could make deposits insensitive to interest rate changes). Indeed if interest rates are held below the market clearing rate, increases in the rate should have a perverse effect and increase real money holdings.

OLS Broad Money Demand Regression Equations 1962-1987

	constant	mt-1	yt	Nominal Discount Rate
1.	-7.26	0.03	1.68	-.26
		(.26)	(9.39)	(5.11)

SEE = .05 RSQUARE = .991 F STAT = 837.2 DW= 1.29

	constant	mt-1	yt	Real Discount Rate
2.	-3.64	.10	1.23	-.60
		(.80)	(6.26)	(-2.41)

SEE = .065 RSQUARE = .985 F STAT = 473.3 DW= 0.90

	constant	mt-1	yt	Time Trend
3.	-4.67	.19	1.32	-0.01
		(1.47)	(6.28)	(-2.25)

SEE = .066 RSQUARE = .985 F STAT = 459.6 DW= .79

	constant	mt-1	yt	Real Rate	Real Income Growth
4.	-1.82	.57	.60	-.28	0.86
		(3.10)	(2.30)	(-1.19)	(3.14)

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[47] Real discount rate (1+r)/(1+p) -1.

SEE = .05 RSQUARE = .99 F STAT = 507.09 DW= 1.56

OLS Narrow Money Regressions

5	constant	yt	Time Trend	Real Discount Rate
	-4.33	1.39	-.01	-.04
		(12.93)	(-2.46)	(-1.65)

SEE = .054 RSQUARE = .988 F STAT = 593.1 DW= 1.03

6.	constant	yt	m t-1
	-1.59	.73	.343
		(3.29)	(2.01)

SEE = .075 RSQUARE = .971 F STAT = 374.0 DW= .62

The interbank money market rate cannot be utilised as the series does not extend before 1974, the nominal discount rate (TEN) is administratively linked to most lending rates and some deposit rates. In view of the fact that the discount rate only changed five times before 1986, and that it predominantly sets lending rates rather than deposit/savings rates, the high significance of increases in discount rates upon decreases in the money supply seems spurious. Interest rates are also set uniformly across the UMOA such that interest rate changes will not always directly reflect developments in the Ivorian economy.

Insertion of a trend variable with interest rates in each equation had the effect of removing significance from the real discount rate, but retaining 95 per cent significance for the nominal rate. One possible explanation is that changes (increases) in the discount rate, when they occur, are at times of extremely short liquidity and therefore low real money balances, thus the administrative rule brings the association rather than 'market forces'.

Dropping the partial adjustment mechanism had little substantial effect upon coefficient estimates in broad money estimations lending weight to the argument that adjustment to desired money holdings is a fairly rapid process. Elasticity of money demand to income was 1.42 in this case and significant at 99 per cent confidence. The Durbin-Watson statistic still showed evidence of serial correlation. Plots of residuals for the different regressions were remarkably similar, showing under prediction of money demand between 1969 and 1978, followed by overprediction up to 1985.

Taking serial correlation as evidence of mispecification, a real income growth variable was added (equation 4) and a substantial improvement in equation performance was found. Both real income growth and lagged money were significant at the 99 per cent confidnec level, real income at the 95 per cent level, whilst

real interest loses significance. The Durbin-Watson statistic is in the indeterminate region, also demonstrated by the more dispersed plot of residuals. The short run income elasticity of demand is 0.6 whilst long run elasticity is 1.39, close to that of previous estimations. The real growth variable suggests that real income shocks have a substantial effect upon money demand, not adequately incorporated in the partial adjustment mechanism. When shocks are large, money holdings appear to adjust very rapidly. This feature may result from the fixed rate regime whereby the effect of real shocks (if external in origin, or in traded goods sector) will rapidly have a monetary effect via changes in reserve holdings.

Although the French bond rate also had a significant negative effect upon money demand, for more plausible reasons of capital flight, a significant link between French-Côte d'Ivoire interest rate differentials and real money demand could not be found on annual data. World Bank (1988) show a demand function for M2 (as above) on monthly data as follows:

$$dM = 0.0401 - 0.03\ dM\text{-}1 + .567\ Rdiff - 1.954\ Time + dummies.$$

(3.16) (3.92) (1.93) (1.93)

R^2=.941 SEE= .0262 DW= 1.81

dM = monthly logarithmic change M2
Rdiff = money market rates Côte d'Ivoire - France
Dummies = to handle seasonality of money demand from harvest

Here increases in the money market rate above the French equivalent are associated with expanding money demand as capital is attracted, or outgoing capital reduced. This reflects one mechanism in the positive real balance effects of interest rate rises.

Equations 5 and 6 for narrow money demand determination do not differ substantially from the broad money estimations.

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