

Islamic Republic of Mauritania: Selected Issues

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**International Monetary Fund
Washington, D.C.**

INTERNATIONAL MONETARY FUND

ISLAMIC REPUBLIC OF MAURITANIA

Selected Issues

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Approved by the Middle Eastern Department

May 9, 2002

	Contents	Page
I.	Introduction.....	3
II.	Recent Economic Developments	5
	A. Introduction.....	5
	B. Real Sector Developments.....	5
	C. Fiscal Policy and Reforms	7
	D. Monetary Policy and Monetary Sector Reforms	10
	E. Banking Sector Developments and Banking Supervision	13
	F. External Sector.....	14
III.	Export Competitiveness and Exchange Rate Policy.....	17
	A. Trade Patterns and Exchange System	17
	B. Export Competitiveness and Exchange Rates.....	20
	C. Exchange Rate Policy	29
	Appendix: The History of Foreign Exchange Market Reforms.....	32
IV.	Monetary Operations and Policy Issues.....	35
	A. Overview of the Current Monetary Policy Framework	35
	B. Quantitative Monetary Framework.....	37
	C. Assessing the Risks of a Credit Squeeze in the Medium Term	39
	D. Conclusion	43
	Appendix: A Simplified Monetary Framework.....	44
V.	Transferring Government Deposits from the Banking System: Monetary Management Implications.....	47
	A. Evolution of Government Deposits in the Banking System	47
	B. Impact of Transferring Government Deposits on Monetary Management.....	49
	C. Allocating Government Deposits Among Banks Through a Credit Auction ..	51

D.	Policy Recommendations.....	53
E.	Conclusion	54
	Appendix: Summary of Credit Auction Procedures Used in Transitional Economies	56

Text Tables

II.1	Iron Ore Exports and Prices	6
II.2	Fish Exports	6
II.3	Consolidated Government Operations, 1997–2001	8
II.4	Banking System Prudential Indicators at End-2001	14
II.5	Summary Balance of Payments, 1997–2001	14
II.6	Direction of Trade, 1997–2001	15
III.1	World Iron Ore Production	26
III.2	Shares in World Iron Ore Production	26
III.3	SNIM's Production Costs	27
III.4	World Fish Exports	28
III.5	Historical Variability of the Exchange Rate, 1980–2001	30
IV.1	Net Withdrawal UM 1 billion in T-bills	38
IV.2	A One Percent Reduction of Reserve Requirements	39
IV.3	Assumptions of Medium-Run Projections	40

Figures

II.1	Contributions to Real GDP Growth and Investment as a Percentage of GDP	5
II.2	Structure of Budgetary Revenues	8
II.3	Structure of Central Government Expenditures	9
II.4	Evolution of Key Monetary Aggregates and Indicators	11
II.5	Evolution of Credit to the Private Sector and its Sectoral Decomposition.....	12
II.6	Evolution of Banking Sector Deposits and Treasury Bills	13
III.1	Foreign Exchange Rate Market, November 1999–March 2002	19
III.2	Monthly CPI-Based Real Effective Exchange Rate Index, 1980–2001	21
III.3	CPI-Based Real Effective Exchange Rate Indices by Trading Partners, 1980–2001.....	21
III.4	Decomposition of Real Effective Exchange Rate Indices, 1980–2001	22
III.5	Decomposition of Real Effective Exchange Rate Indices, 1980–2001	22
III.6	Mauritania with Russia and China	24
III.7	Mauritania with Australia, Brazil, and South Africa	24
III.8	Mauritania with Morocco and Senegal	24
III.9	Real Effective Exchange Rate Indicators, 1980–2001	25
III.10	Terms of Trade and REER Based on Export Deflator, 1980–2001.....	25
IV.1	Medium-Run Evolutions Under Baseline Scenario	41
IV.2	Alternative Simulations of Credit to the Private Sector and Private Deposits	42
V.1	Evolution of Government Deposits vs. Monetary Aggregates, 1997–2001	48
V.2	Treasury Bill Purchases and Government Deposit Holdings at Commercial Banks...	49

I. INTRODUCTION

This selected issues paper covers three topics of particular relevance to Mauritania: export competitiveness and exchange rate policy, the monetary policy framework, and the transfer of government deposits from commercial banks to the central bank. These policy-oriented notes aim at advancing policy dialogue with the authorities on these issues that have been the focus of discussions over the last two years, mainly in the context of the Poverty Reduction and Growth Facility (PRGF) arrangement. In addition, the paper begins with an introductory chapter (Chapter I) that covers recent macroeconomic developments and structural reforms over the last three years.

Chapter I reports on recent economic developments over 1999–2001. It describes a stable macroeconomic environment with robust growth, low inflation, manageable current account deficits, and a comfortable level of gross foreign reserves. While growth is still concentrated on certain traditional sectors, such as mining, fishing, agriculture, and livestock, the share of other sectors has been rising, namely construction, transportation, and telecommunications. This strong performance has been supported by sound macroeconomic policies and structural reforms.

Although fiscal policy has become more expansionary in the last two years, it has been generally prudent, with the government accumulating large deposits in the banking system, including in commercial banks, since budget deficits have been more than covered by external concessional financing. In this environment, monetary policy has been eased to create the right environment for private sector growth, and the central bank reduced the discount rate (*le taux directeur*) from 18 percent in early 2000 to 11 percent at present. The exchange rate has become more responsive to market signals, while at the same time the monetary authorities have been monitoring the exchange rate to ensure that external competitiveness (Chapter II) is not put at risk. Furthermore, vigorous structural reforms on all fronts, i.e., fiscal, monetary, and private sector investment, have been implemented.

Chapter II looks at the issue of export competitiveness and exchange rate policy. It briefly reviews latest developments in trade patterns and the reform of the trade regime, which is highly open and free of restrictions. Real effective exchange rate indicators and market shares were used to assess Mauritania's export competitiveness, mainly for its two basic export commodities, iron ore and fish. The depreciation of the nominal exchange rate over the last 15 years or so has compensated for the positive inflation rate differential vis-à-vis Mauritania's trade partners. Notwithstanding the weaknesses of the data and the limitations of the analysis, it appears that the overall competitiveness has been maintained. As for exchange rate policy, the paper calls for maintaining exchange rate flexibility in view of Mauritania's exposure to idiosyncratic shocks and suggests that the central bank should give more weight to the euro in its daily management of the rate. This is in view of the sizable share of Europe in Mauritania's trade and the prospects of exporting agricultural, livestock, and processed fish products to Europe and to countries in the region that have exchange rates linked to the euro.

Chapter III provides an overview of the current monetary policy framework in Mauritania and the transmission channels of monetary policy instruments. A quantitative monetary framework is developed to evaluate the impact of different policy measures, such as changing the stock of treasury bills and the reserve requirement ratio on monetary aggregates. This model is then used to assess the medium-term evolution of private sector credit using the medium-term macroeconomic framework adopted by the authorities in their Poverty Reduction Strategy Paper (PRSP), and which underlies the PRGF-supported program. The chapter concludes that with an expansionary fiscal policy, stemming mainly from increasing expenditures on social sectors and poverty-reducing projects, and in the absence of new policy measures, interest rates will be higher and a private sector credit crunch would emerge, even with moderate mobilization of private sector deposits and a reduction in the reserve requirement ratio. Hence, there will be a need for additional policy measures aimed at providing banks with liquidity, such as credit auctions, which is discussed in the following chapter.

Chapter IV reviews the evolution of government deposits in the banking system since 1996 and addresses the reasons for moving government deposits to the central bank. The risks associated with keeping government deposits in commercial banks relate to the safety of these deposits and the potential implications on the banking system from a sudden withdrawal that could be triggered by exogenous shocks—a likely event in Mauritania given its vulnerability to exogenous shocks stemming from its narrow production and export base. These deposits not only introduce complications to the conduct of monetary policy (in an already weak monetary policy framework) and tend to discourage banks from actively mobilizing private sector deposits, but also go against enhancing competition in the market. The paper considers the case of having a credit auction in Mauritania, in light of the experience of many transitional economies, and makes preliminary recommendations on the design and management features of the auction.

II. RECENT ECONOMIC DEVELOPMENTS

A. Introduction

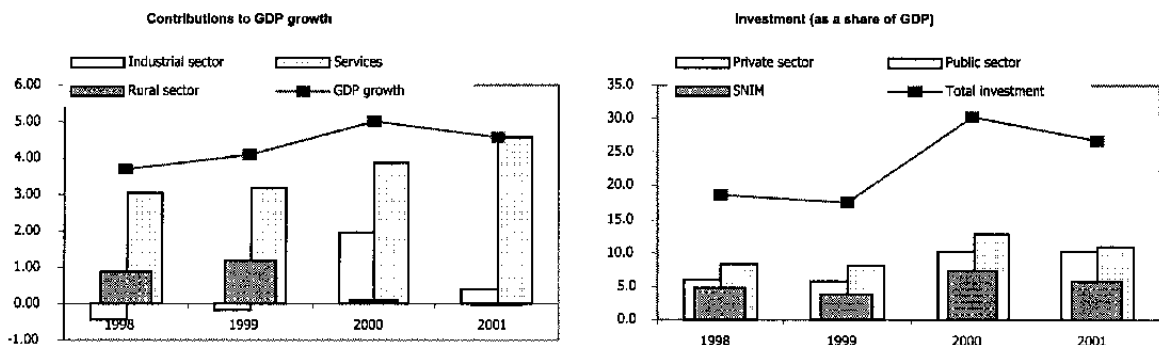
1. **Performance under the PRGF-supported program (1999–2001) has been strong.** Real GDP growth averaged about 4.5 percent (compared to 4.1 percent over 1996–98), despite the adverse impact of the global economic slowdown in the second half of 2001 on Mauritania’s export of iron ore. Inflation remained in check with the CPI annual average inflation rate not exceeding 5 percent, and the current account deficit (excluding official transfers) remained under control at 2 percent of GDP in 2001. Official gross reserves increased to 7 months of imports by end-2001.

2. **Economic growth has been broad based and gradually involving the private sector.** Macroeconomic stability has been consolidated, the business environment simplified, the corporate tax rate reduced, and government involvement in productive activities reduced through the privatization of major public utilities. In 2001, the investment code was amended to enhance transparency and remove tax distortions, while a new public procurement code was adopted to improve procurement procedures and accelerate project implementation. Tax-free zones were also created in early 2002 to attract further foreign direct investment (FDI). The economy is gradually being diversified into sectors, such as irrigated agriculture, food and fish processing, mineral extraction, and tourism. Remaining impediments to stronger growth include weak basic infrastructures and a shortage of skilled labor.

B. Real Sector Developments

3. **Steady growth was driven by increased activity in nontraditional sectors.** The expansion has been concentrated mainly on the sectors of trade, telecommunications, and public works. Uneven growth has characterized agriculture and the two main exporting sectors (iron ore and industrial fishing). In the past three years, real investment has increased to close to 25 percent of GDP (from 19 percent in 1996–98), thanks mainly to a rise in public investment, an ongoing expansion in mining capacity, and large FDI in the recently liberalized telecommunications industry.

Figure II.1. Mauritania: Contributions to Real GDP Growth and Investment as a Percentage of GDP



4. **Adverse shocks have led to a disappointing performance in the iron ore sector since 1998 (Table 1).** In 1999, technical difficulties at the state mining company (SNIM) led to falling exports at a time when world prices were also declining. Some recovery took place in 2000, but lower global demand drove down exports again in 2001 to their lowest level since 1993. SNIM has nevertheless continued its investment program aimed at expanding capacity (to reach 13.5 MT by 2005) and boosting productivity. SNIM's investment averaged 5.5 percent of GDP over 1999–2001, compared to 3.7 percent of GDP in 1996–98.

Table II.1. Mauritania: Iron Ore Exports and Prices

	1993	1994	1995	1996	1997	1998	1999	2000	2001
Export volume (in millions of metric tons)	9.7	10.3	11.5	11.1	11.6	11.4	11.0	11.1	10.1
Unit price (US\$/metric ton)	...	15.8	17.2	18.6	18.7	18.3	16.3	16.8	17.3

Source: SNIM.

5. **Renewed interest has emerged in Mauritania's potential in the extraction of oil and other minerals.** A mining investment code has been put in effect in 1999 and amended in early 2002, with a view to introduce tax incentives and simplify awarding of mining permits. Prospecting efforts have recently intensified, along with an increase in FDI in exploration activities (US\$15 million in 2001, against US\$10 millions in 1999). In the oil sector, prospecting activities have also been conducted off Mauritania's coastline since early 2001. Initial results indicate the existence of oil reserves, but it has not yet been possible to prove that these are commercially viable and will lead to some oil exploitation in the future.

6. **Fish exports have been constrained by the need to preserve resources over the long run (Table 2).** In 1999–2001, the fish catch has partly recovered from the 1997–98 trough, which came as a consequence of overfishing in the early- to mid-1990s. For cephalopods, the most valuable resource in Mauritanian waters, catch levels in 2000–01 were close to their estimated sustainable potential (about 30 KT per year), and room for further exploitation appears limited. A new five-year fishing agreement (2001–05) was concluded with the EU in July 2001, raising the annual fishing royalties collected by the budget by about 3 percent of GDP (to reach about 8 percent of GDP).

Table II. 2. Mauritania: Fish Exports
(In thousand of metric tons; unless otherwise stated)

	1997	1998	1999	2000	2001
Cephalopods	23.5	19.3	26.2	27.1	32.6
Demersals	9.3	7.3	5.9	8.3	10.7
Pelagic	166.8	151.4	170.4	156.8	105.4
Shellfish	0.6	0.4	0.4	0.8	1.6
Volume Index (based on 1997 prices)	100.0	84.4	105.0	107.2	115.2

Source: Ministry of Economic Affairs and Development.

7. **The recent performance of the agriculture sector has been uneven.** Traditional cereal crops, mainly millet and sorghum, benefited from very favorable rainfall in 1999, but production then fell back to levels closer to historical averages in 2000 and 2001. Paddy rice production has receded in recent years, with production down by 40 percent in 2001 from the 1998 peak. However, the authorities launched in 2000 an IDA-supported project for the development of irrigated agriculture (PDIAIM), aimed at raising rice yields and promoting more remunerative crops. In December 2001, the southern parts of the country suffered from storms and unusually cold weather, resulting in losses in livestock, crops, and agricultural tools.

8. **Construction and public works have been strong over 1999–2001, with average growth nearing 8 percent.** The sector has been boosted by increased public investment supported by higher development funding, particularly in road construction and maintenance, and water supply.

9. **The services sector has been the main growth engine in recent years.** Over 1999–2001, sustained growth (of about 5.5 percent) has been recorded in trade and transport, along with outstanding performance in the telecommunications sector. Following the liberalization of this sector, the mobile phone industry has expanded well beyond expectations, with the number of cell phones exceeding 120,000 at end-2001 (about 40,000 at end-2000).¹ Tourism also seems to be expanding rapidly, although this has remained on a small scale so far.

C. Fiscal Policy and Reforms

10. **Macroeconomic stability owes much to prudent fiscal policies.** The overall budget position has been generally cautious, with expenditures being reoriented toward social sectors and poverty reduction. The overall budget position turned into a deficit of about 1 percent of GDP on average during 1999–2001, against a surplus of more than 4 percent of GDP in 1997–1998.² The budget deficits were financed entirely through external concessional loans and grants, as the government has been accumulating deposits in the banking system.

¹Figures vary according to sources. According to the Ministry of Economic Affairs and Development, the number of cell phones reached 173,000 at end-2001, against 120,000 according to the *Autorité de Régulation*.

²The budget position was in surplus of more than 4 percent of GDP in 1999. However, as a result of the government shareholder advance to Mauritel granted in 2000, and the delay in the EU fish license fee payment in 2001, the overall budget balance turned to a deficit. Once corrected for these two factors, the average balance over 1999–2001 turns into a surplus of about 2.5 percent of GDP, i.e., 1.5 percent of GDP lower than during 1997–98.

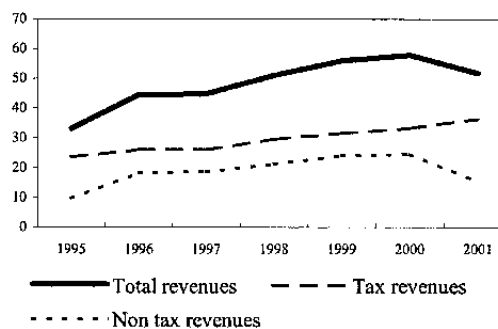
Table II.3. Mauritania: Consolidated Government Operations, 1997–2001
(In percent of GDP)

	1997	1998	1999	2000	2001
Revenue excluding grants	26.9	27.0	27.9	25.9	21.1
Tax revenue	15.6	15.6	15.7	14.9	14.8
Nontax revenue	10.7	10.7	11.7	10.3	5.3
Expenditure and net lending	22.7	24.9	25.7	30.4	26.7
Current expenditure	16.6	17.2	17.9	17.5	17.2
Capital expenditure and net lending	5.9	7.3	7.5	12.8	9.4
Surplus or deficit excluding grants (-)	4.2	2.1	2.2	-4.5	-5.6
Foreign including grants (net)	-0.6	-1.7	-0.1	1.1	0.4
Domestic (net)	-6.9	-4.3	-6.7	-8.7	-1.4
Exceptional financing	3.3	3.9	4.6	4.9	5.1
Mauritel op. and other privatization revenue	0.0	0.0	0.0	7.2	1.5
Memorandum items:					
Revenue including grants	27.7	28.5	30.5	27.1	22.7
Surplus or deficit including grants (-)	5.0	3.6	4.8	-3.3	-4.0
Primary balance	7.1	5.6	5.7	-1.2	-2.7

Sources: Mauritania authorities; and Fund staff estimates.

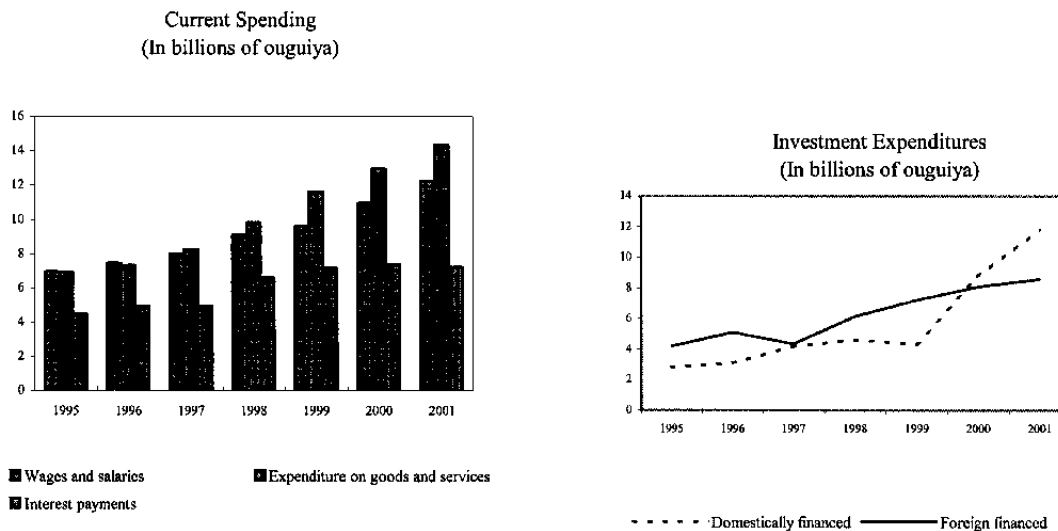
11. **Government revenues excluding grants increased by about half a percent of GDP on average during 1999–2001 (compared with 1997–1998), assuming that the 2001 fishing license payment (about 8 percent of GDP) came in on time.** Tax revenues declined slightly by less than one percentage point of GDP during the same period, on account mainly of the effect of reduced trade tariff rates resulting from the second round of tariff reforms over 1998–2001. Over the same period, a slight decline in taxes on income and profits has been more or less offset by higher taxes on goods and services.

Figure II.2. Mauritania: Structure of Budgetary Revenues
(In billions of ougiyas)



12. **Total expenditures in relation to GDP increased by about 4 percent of GDP during 1999–2001 compared with the preceding 1997–98 period.** This is resulting essentially from an increase in capital spending which reached about 9.5 percent of GDP in 2001 from 6 percent of GDP in 1997.³ On the other hand, current expenditures increased at a much slower pace to reach 17.2 percent of GDP in 2001 from 16.6 percent in 1997. In this context, total social sector spending increased by about 1 percent of GDP to reach over 8 percent during the same period. In relation to total expenditures, spending on wages and salaries and on interest payments declined by 2 and 2.5 percent of GDP, respectively, between 1997 and 2001.

Figure II.3. Mauritania: Structure of Central Government Expenditures



13. **Additional reforms in the areas of tax administration and the taxation system were introduced to improve tax collection and enhance efficiency.** A large taxpayers unit was created and the tax audits unit was reinforced. Important reform measures of indirect taxation included the unification of the VAT rate at 14 percent, the elimination of VAT exemptions (in the context of the 2001 budget law), and the removal of all discretionary tax incentives from the investment code to be introduced in the common tax law. Reforms of direct taxation, launched in 2000, aimed at reducing the effective taxation rate on businesses mainly through: (i) gradually raising the deduction made under the minimum presumptive tax (IMF) to 100 percent by 2002; (ii) reducing the corporate income tax in steps from 40 percent in 2000 to 35 percent in 2001 and to 25 percent in the context of the 2002 budget law; and

³This increase in capital expenditures was partly caused by the shareholder advance made by the government to Mauritel in 2000 (about 4 percent of GDP) to improve its balance sheet and allow the company to buy a cellular license while continuing to be viable and attractive for its eventual privatization, that was completed in 2001.

(iii) simplifying the general income tax by reducing the number of income brackets from 11 to 5 in 2001.

14. Efforts to improve implementation and monitoring of public expenditures intensified in 2001. The authorities established a committee to monitor all expenditures financed by HIPC resources, through quarterly reporting identifying in detail the use of HIPC resources and other budgetary resources for social sectors and poverty reduction. To improve expenditure planning, the government prepared medium-term expenditure frameworks for the priority sectors of health and education in 2001. In 2002, this exercise is programmed to be extended to other priority sectors, and a comprehensive framework for total government spending is expected before the end of 2002. To expedite the procurement process, a new procurement code was adopted in late 2001 and the related implementing regulations were finalized in May 2002. The new code is expected to increase transparency of government operations, and contribute to improving implementation capacity.

15. Privatization program: The privatization of Air Mauritanie was completed in July 2000 and that of the telecom company OPT in April 2001. The privatization of the national telecom company Mauritel was a major success, yielding the equivalent of US\$4,065 per access line (the highest result of any strategic sale of a state telecom operator recorded in Africa). This operation concluded the first phase in the reform of the telecom sector, which included, in addition to the privatization operation, the launching of cellular services with the sale of one license to Mauritel and a second one to an international operator, and the opening of international telephone services to competition. In other sectors, important steps have been taken in the last two years to bring the electricity branch of SOMELEC to the point of sale, including the adoption of the electricity code, the law on privatization, and the law on multi-sectoral regulation.

16. The government started taking steps to address the precarious financial situation of the national social security fund CNSS. This fund, which is financed by contributions from both employers and employees at the rates of 13 percent and 1 percent of taxable wages, respectively, has seen its financial situation deteriorate over the recent years, with operating deficits covered by previously accumulated reserves. Concerned about such a development, the government encouraged the CNSS in 2001 to intensify its collection effort and take steps to restructure its organization and reduce its administrative costs. At end-March 2002, the CNSS increased the ceiling on taxable wages for social security contributions after consultation with social partners. Furthermore, important actions are being devised for the coming years on the basis of an actuarial study recently completed by the ILO.

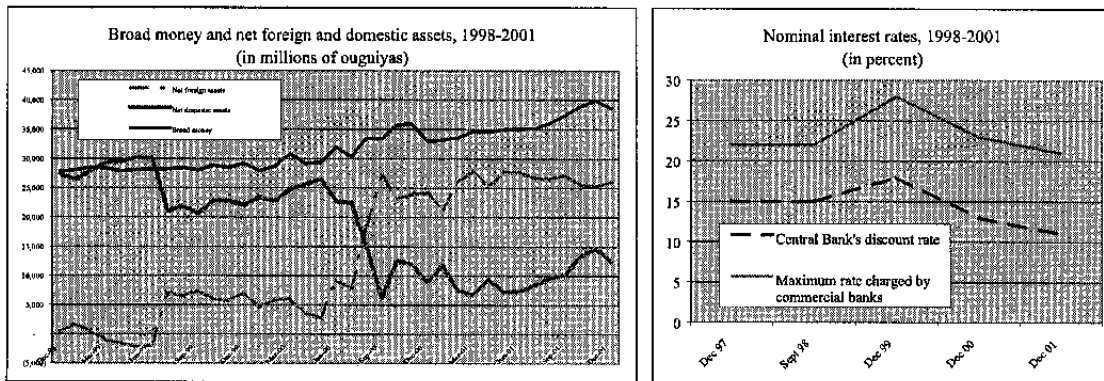
D. Monetary Policy and Monetary Sector Reforms

The Evolution of monetary policy and aggregates

17. Broad money grew rapidly during the last three years, reflecting an improvement in the economic environment, resulting in an increase in money demand.

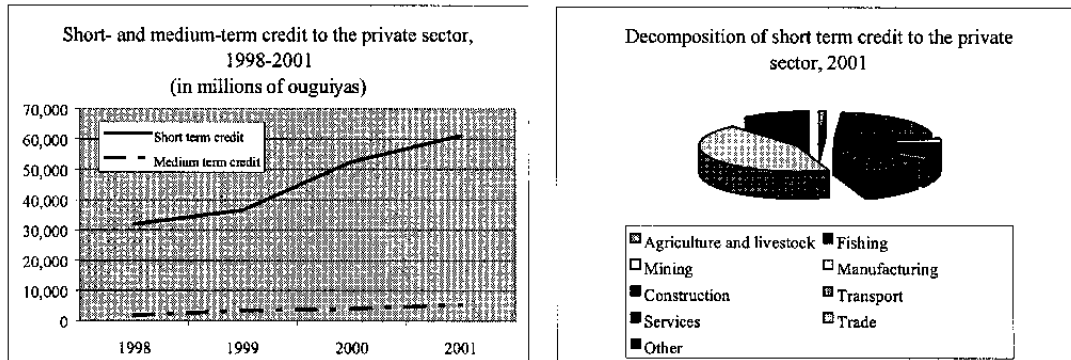
The annual average money growth rate increased to about 12 percent in 1999–2001, from 6 percent in 1997–98. The growth rate of reserve money exhibited a different trend during this period: after contracting by 8 percent in 1998, it grew by about 5 percent on average during the following three years, reflecting a consistently rising money multiplier since 1999. Net foreign assets increased on account of the EU fishing license payments, while net domestic assets contracted on account of the increasing government's net creditor position at the banking system (Figure 4).

Figure II.4. Mauritania: Evolution of Key Monetary Aggregates and Indicators



18. **Credit to the private sector continued to show robust growth** with the annual rate averaging about 20 percent in 1999–2001 compared with 11 percent in 1997–98. The credit stock reached UM 70 billion in 2001 (about 28.5 percent of GDP), extended mainly as short-term credit (93 percent). This was driven primarily by the general trade sector (40 percent) and the fishing sector (20 percent), with their shares rising since end-1998 from 38 percent to 40 percent and from 25 percent to 20 percent, respectively. The share of medium-term credit grew slightly; from 5 percent in 1998 to 8 percent of total credit extended in 2001, mainly driven by the fishing sector. Much of the short-term credit is rolled over and renegotiated. (Figure 5).

Figure II.5. Mauritania: Evolution of Credit to the Private Sector and its Sectoral Decomposition



19. **The central bank has been relying increasingly on indirect monetary instruments for the conduct of monetary policy.** The stock of treasury bills increased from UM 5.7 billion at mid-1998 to UM 6.2 billion by end-2001. The secondary treasury bill market is yet to emerge. The majority of bids during 2001 were accepted, with rates falling throughout the year from about 11 to about 3 percent at year-end. Although rarely used, a reverse-repo agreement facility was added to the central bank's repertoire of indirect instruments in 2001, and replaced the discount window that had been closed for years before. This new facility constitutes the main refinancing instrument for commercial banks during the intervening treasury bill auction periods. In addition to these instruments, the reserve requirement ratio has been maintained at 4.5 percent of private deposits since late 1997. However, some restructuring to the penalty rate in the form of a reduction in the fixed cost element and an increase in the variable cost element was introduced in late 2000, while reserve requirements were extended to government deposits in late 2001. The interbank deposit market remains inactive, with banks relying on government deposits and treasury bill auctions to address their liquidity needs.

20. **Nominal interest rates have been declining since early 2000, as the central bank gradually reduced the repurchase rate from 18 percent to 11 percent by the end of 2001.**⁴ The reduction in the interest rates was aimed at reducing the high (real) cost of borrowing in general and at encouraging bank lending to the private sector, and in particular, to nontraditional borrowers who usually have had limited access to credit because of their relatively weak ties to the banking system (Figure 1).⁵ The reduction in the repo rate was passed on by banks to their clients at varying degrees, depending on the bank and the quality

⁴The repurchase rate was previously called the discount rate.

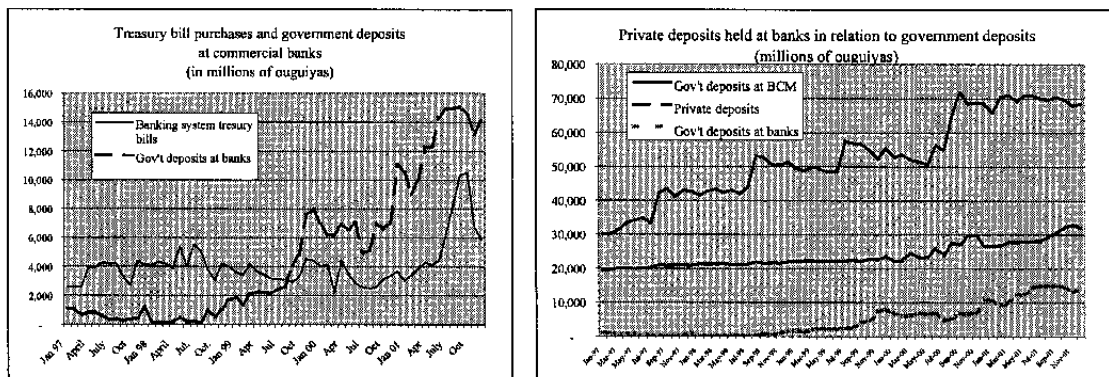
⁵In 2002, government deposits held at commercial banks began to be remunerated at 3 percent. At end-2001, government deposit accumulation in the banking system increased to represent 17 percent of banks aggregated balance sheet and since end-1999 grew by 77 percent.

of customers it holds in its portfolio. Concurrently, the central bank reduced the minimum rate paid on private saving deposits paid by commercial banks from 10 percent in 1999 to 8 percent in 2001.

E. Banking Sector Developments and Banking Supervision

21. **The banking sector has been expanding with intensifying efforts to mobilize new private deposits.** In late 1999, the banking sector saw the addition of two new banks (BADH and BCI), bringing the total number of deposit money banks to seven. The former was *La Banque de l'Habitat de Mauritanie (BHM)*, which saw its inception as a housing bank at end-1997, was renamed and restructured to become a commercial bank. The two new banks together with the BCI expanded their network, increasing the number of branches within the country by 10 at end-2001. In addition, two other banks were licensed in late 2001 and are expected to commence operations in 2002: *la Banque du commerce et d'investissement en Mauritanie, BACIM*, and *la Compagnie de banque commerciale*. Annual growth of private sector deposits collected by banks in 1999–2001 was 13 percent (Figure 6).

Figure II.6. Mauritania: Evolution of Banking Sector Deposits and Treasury Bills



22. **Banking supervision capacity at the central bank is being strengthened with a view to enhancing monitoring of banking activity.** The banking supervision department at the central bank is undergoing restructuring, with skills upgraded and augmented to conduct on- and off- site inspections of the financial system. This department is also revising the 1995 Banking Law directives pertaining to banking supervision. The inspection of banks is being reinforced to ensure observance of prudential ratios: the liquidity ratio, the capital adequacy ratio, ratio of fixed assets to capital, and the net foreign open position and the concentration ratios. At mid-2001, the banking supervision department was charged with monitoring the implementation of the *contrats programmes* signed between commercial banks and the central bank. These call for the observance of all prudential ratios and a reduction in loan concentration ratios at each bank for group borrowers (to 40 percent) and for individual borrowers (to 20 percent) (Table 4).

Table II.4. Mauritania: Banking System Prudential Indicators at End-2001 ^{1/}

	Loan concentration ratios ^{2/}						Liquidity ratio (over 20%)	Capital adequacy ratio (over 10%)	Other prudential ratios	
	Group borrowers			Individual borrowers					Ratio of fixed assets to capital (under 100%)	Net foreign open position (20% of total)
	Target	Status ^{3/}	No. of groups > target	Target	Status ^{3/}	No. of ind's > target				
BAMIS	62.5%	103.2%	2	35%	57.4%	2	22.4%	15.4%	98.4%	n/a
GBM	62.5%	63.7%	1	35%	34.0%	0	20.7%	22.5%	46.5%	n/a
BNM	62.5%	76.5%	1	35%	62.1%	3	43.8%	27.5%	60.7%	n/a
BCI	47.5%	observed	0	25%	observed	0	36.2%	20.0%	55.9%	n/a
BADH	47.5%	observed	0	25%	observed	0	30.9%	14.2%	55.0%	n/a
BMCI	47.5%	observed	0	25%	observed	0	29.3%	20.1%	66.2%	n/a
Chinguity	47.5%	55.8%	1	25%	23.8%	0	22.0%	18.8%	73.7%	n/a

1/ Two banking supervision directives have are in the process of revision under the guidance of the MAE resident banking supervision adviser. These pertain to risk classification of assets and their provisioning and the application of interest rate policy. The prudential framework's compliance with the 25 Baise core principles was last assessed in late 1999 by MAE and found that there was broad compatibility with 11 principles; suggestions for specific improvements in application and monitoring with 13 principles; and a serious shortcoming with one principles which is the subject of the current directive revision (asset quality and provisioning). Some of these have been addressed through the current contracts programmes. However the ratio of fixed assets to capital exceeds the Baise 75 percent maximum.

2/ These ratios are set to fall for Group borrowers to 40 percent and for individuals borrowers to 20 percent. The timetable agreed in the contracts programme targets these for end June 2002 at each of Chinguity, BCI, BADH and BMCI, while the remaining banks are set to meet these by year end 2003.

3/ The highest concentration ratio registered.

F. External Sector

23. **The external position continued to be vulnerable to external shocks and dependent on concessional lending and Heavily Indebted Poor Countries (HIPC) assistance.** Mauritania's economic and export base remained very narrow—mainly iron ore and fish—and the limited export diversification left the country very vulnerable to external price and demand shocks. The country remained also heavily indebted, but began to benefit from assistance under the enhanced HIPC Initiative.

Table II.5. Mauritania: Summary Balance of Payments, 1997–2001
(In millions of SDRs; unless otherwise stated)

	1997	1998	1999	2000	2001
Current account (including official transfers)	12	-8	29	6	-43
Trade balance	38	1	21	12	-9
Exports	297	265	244	261	271
<i>Of which: iron ore</i>	154	160	130	147	148
Imports	258	264	223	250	280
<i>Of which: petroleum products</i>	50	36	45	75	74
Services (net)	-115	-104	-100	-95	-87
<i>Of which: interest payments due</i>	37	30	27	29	26
Capital account	-4	-11	-43	4	-34
Overall balance	8	-19	-14	10	-77
Memorandum items:					
Current account (including official transfers), as percent of GDP	1.5	-1.1	4.2	0.1	-5.7
Reserve cover (months of imports)	4.7	4.4	5.8	7.0	6.9
Debt service ratio, after debt relief (percent)	29.8	23.7	22.4	24.0	15.5
Terms of trade (percent change)	8	-10	-10	6	6

Sources: Mauritanian authorities; and Fund staff estimates.

24. **After falling sharply in 1999, export values have risen back over the past two years to the levels observed in 1997–98**, despite the decline in iron ore exports in 2001 that resulted from the global slowdown from mid-2001. Over 1999–2001, fish exports benefited from increasing prices in SDR terms (broadly constant in U.S. dollar terms). Import values have slightly increased over the period with non-SNIM imports increasing slightly faster than those by SNIM, and with the value of petroleum product imports remaining broadly stable in 2000–01, but about 2/3 higher than in 1999.⁶ The terms of trade have improved by about 6 percent in each of 2000 and 2001, compared with declines of 10 percent in each of the previous two years. Over the past two years, the pattern of trade has continued its recent trend, with the vast majority of exports going to industrial countries,⁷ and most imports also continued to come from these countries (Table 6).

Table II.6. Mauritania: Direction of Trade, 1997–2001

	1997	1998	1999	2000	2001
Industrial countries' share of exports from Mauritania	86	83	80	77	72
Industrial countries' share of imports by Mauritania	65	64	63	65	63

Source: IMF, *Direction of Trade Statistics*.

25. **Services and transfers:** Nonfactor service transactions reflect fishing and transport activities. In 2001 the sudden deterioration reflects the delayed payment of fishing license payments by the EU (which arrived in early 2002), which constitute the bulk of factor services. Private transfers have continued to grow, while official transfers have shown a decline over the past two years, though the level of public investment-related transfers has remained stable.

26. While the **capital account** has improved sharply, this reflected mainly increased foreign direct investment connected with privatization of the telecommunication sector in 2001. However, scheduled debt repayments have not been matched by new borrowing inflows. Although the overall balance has worsened, exceptional finance (including debt relief) has been increasing, providing additional financing. Gross reserves have remained at a healthy level, reaching seven months of imports in both 2000 and 2001.

27. **Official external debt** amounted to about SDR 1.7 billion at end-2001. New loans continue to be contracted mainly on highly concessional terms and for very long maturities. Multilateral debt has increased since 1999, while bilateral debt has continued to decrease. Debt service obligations now reflect the benefit of assistance under the enhanced HIPC, and

⁶Volumes have grown strongly in 2000 and 2001, while prices have risen slightly.

⁷Japan's share has declined significantly over the past few years (from about 25 percent to 10 percent in 2001), and the value of exports there is now only about one-third of their level in 1997.

this debt relief has had the effect of notably reducing the debt service ratio in 2001.⁸ Debt management practices have improved over the past two years, and staff training has been increased, although more still needs to be done, particularly on improving coordination among the official entities involved with the contracting and monitoring of external debt.

28. **External sector reforms** included the elimination of surrender requirements to the central bank of mineral and non-mineral export proceeds, in steps, between June 1999 and June 2001. Exchange rate policy was geared to making the exchange rate more responsive to market forces and to maintain external competitiveness. The central bank adopted several measures aimed at deepening the foreign exchange market as well as at unifying the expanded exchange market rate (MCE) and the cash rate offered mostly by exchange bureaus.⁹ In the last two years, the gap between these two rates has remained below 10 percent. The real effective exchange rate remained virtually unchanged in 2000–01. Mauritania accepted the obligations of Article VIII, Sections 2, 3, and 4 of the IMF's Articles of Agreement in July 1999. Section 2 on export competitiveness and exchange rate policy covers this issue comprehensively.

⁸Arrears have been substantially reduced as part of this process, with remaining arrears being limited to certain non-Paris Club bilateral creditors.

⁹The average daily volume of transactions in the MCE increased from about US\$120,000 in January 2000 to about US\$400,000 in December 2001.

III. EXPORT COMPETITIVENESS AND EXCHANGE RATE POLICY¹⁰

1. This chapter discusses several issues pertaining to Mauritania's competitiveness and exchange rate policy. Section A outlines Mauritania's trade patterns and exchange system. Section B provides an assessment of export competitiveness, based mainly on real effective exchange rate indicators and developments in market shares. Section C then offers some suggestions for exchange rate policy and daily management of the exchange rate.

A. Trade Patterns and Exchange System

2. **Mauritania's export base is heavily concentrated.** Almost all of Mauritania's exports (close to 99 percent) consist of two commodities: fish and iron ore, representing 45 percent and 54 percent of total exports in 2001, respectively.¹¹ About 80 percent of exports go to industrial countries. EU countries are the sole recipients of iron ore, the major customers being France, Japan, Italy, and Spain, while fish exports are directed primarily at Asian countries, mainly Japan. Virtually no exports go to the United States.

3. **Attempts at diversifying the export base have had limited success so far.** In its 2000 Poverty Reduction Strategy Paper (PRSP), the government declared its intention to develop agricultural and livestock products, which will require foreign direct investment to develop distribution and packaging of fresh products. Another area of focus is tourism, which currently suffers from a shortage of basic infrastructure.¹²

4. **Mauritania's unfavorable climate, a low level of industrialization, and its narrow production base are reflected in its import composition.** Petroleum products represent about 30 percent of total imports, food about 25 percent, machinery, transport, and equipment another 25 percent, with a further 15 percent being basic manufactures. The geographical distribution of imports is less skewed than that of exports, with about 60 percent coming from industrial countries. The bulk of imports come from the EU, with France (25–30 percent) having a share far in excess of any other country. About 6 percent of imports come from each of Africa and the Middle East, and about 10 percent from Asian developing countries. In contrast, Japan and the United States each account for only 3 percent of imports.

¹⁰Prepared by Nabil Ben Ltaifa, Nicolas Carnot, and Dennis Jones.

¹¹Balance of payments data are weak, and there are persistent discrepancies between data derived from different national agencies and with partner country information. Trade statistics offer irregular breakdowns of trade by region and by commodity.

¹²Recent attempts at offshore oil exploration have not yet shown clear positive results. The first well drilled in May 2001 produced positive results, but subsequent drilling was less encouraging. Further exploration is needed before any conclusions on the size and industrial exploitation of Mauritanian oil reserves can be made.

5. **Mauritania trades very little with other African countries**, with only 12 percent of exports and 6 percent of imports according to latest information. The vast majority of this trade is with two trading zones, UMA and ECOWAS.¹³ The main benefit of UMA membership is the access to mineral oil and related products. The main trading partners on the export side are Côte d'Ivoire, Liberia, Togo, and Benin, and on the import side Senegal and Côte d'Ivoire.

6. **Significant progress has been made in liberalizing Mauritania's foreign trade regime.** Until the mid-1990s, the trade regime was characterized by high protection rates, multiple tariff rates and bands, widespread exemptions, and significant nontariff barriers. Trade liberalization efforts intensified after the adoption of a medium-term strategy to reform the trade regime in late 1996. In particular: (i) the licensing system was eliminated; (ii) all import and export monopolies were abolished; (iii) the number of tariffs and quasi-tariffs was reduced from 33 to 4; and (iv) the combined maximum tariff rate was reduced from 180 percent to 20 percent by 2000. As a result, Mauritania's average tariff rate was brought down from 19 percent to 9.2 percent in 2001, and its trade restrictiveness index has improved from 3 to 2 (on a scale of 1–10, with 10 being the most restrictive).¹⁴

7. **The system of exchange controls has also been widely liberalized over the past decade.** Since 1995, the major changes include the gradual removal of surrender requirements of export proceeds, the abolition of licenses to purchase imports, and the elimination of foreign exchange restrictions. Mauritania accepted the obligations under Article VIII of the Fund's Articles of Agreements in July 1999.

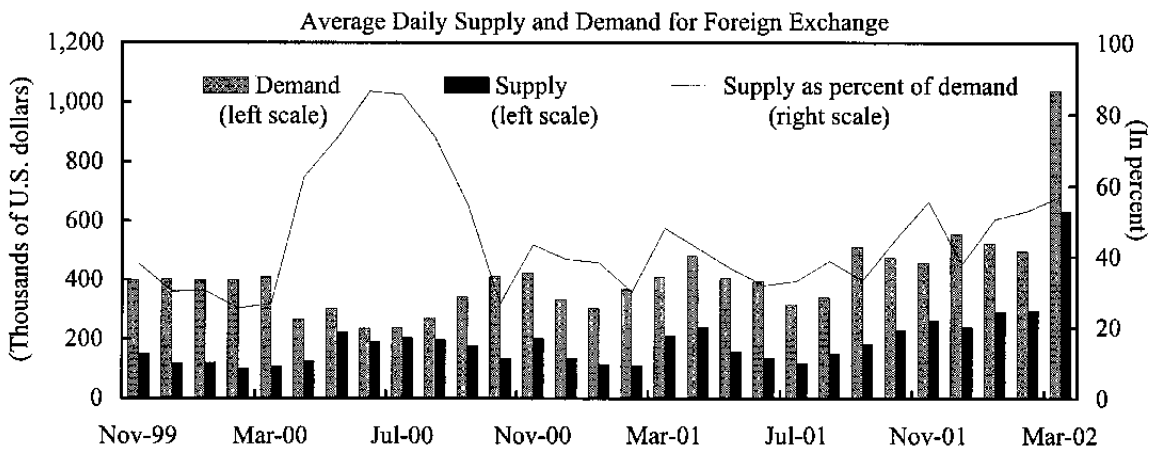
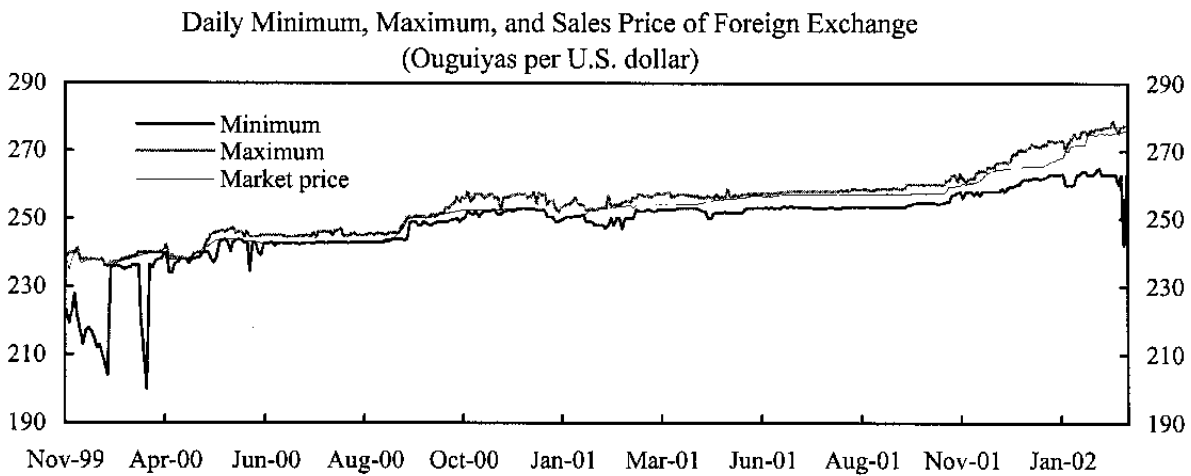
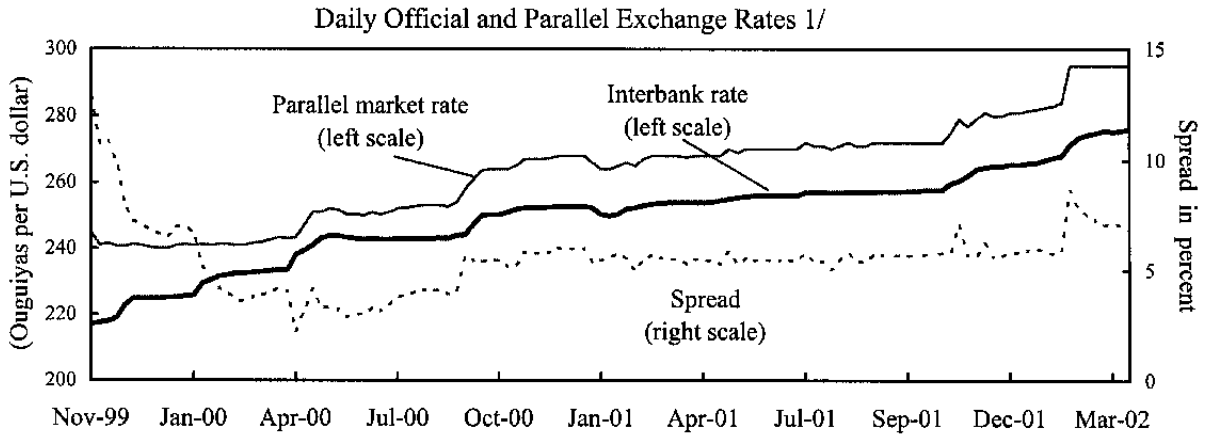
8. **Important steps have been taken toward a market-oriented determination of the exchange rate.** A unified foreign exchange market has been gradually put in place, in particular with the introduction of the Expanded Exchange Market in April 2000, in which all banks and exchange houses participate. The central bank (*Banque Centrale de Mauritanie*) now determines the daily exchange rate on the basis of supply and demand trends in this market as well as other objectives, related to competitiveness, inflation, and reserve targets. Over the past two decades as well as in recent years, the Mauritanian currency has exhibited a depreciating trend against the major currencies (Figure 1).¹⁵

¹³The *Union du Maghreb Arabe* (UMA) comprises Algeria, Libya, Mauritania, Morocco, and Tunisia. The Economic Community of West African States (ECOWAS) consists of Benin, Burkina Faso, Cape Verde, Côte d'Ivoire, The Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, and Togo. Mauritania left ECOWAS effective January 1, 2001.

¹⁴Calculated by the Fund's Policy and Review Department.

¹⁵Further details on the history of exchange market reforms are provided in Appendix I.

Figure III.1. Mauritania: Foreign Exchange Rate Market, November 1999–March 2002



Source: Mauritanian authorities.

1/ The EEM (Expanded Exchange Market) operations began around end of April, 2000.

B. Export Competitiveness and Exchange Rates

9. Assessing the competitiveness of Mauritania's exports is difficult in view of data limitations, its narrow export base, and the institutional and trade arrangements in place that could affect exports for reasons not related to competitive factors. Traditionally, real effective exchange rate (REER) indicators along with the evolution of export market shares have been used to assess price competitiveness in several countries. Despite their limitations, these measures could provide some useful insights on Mauritania's competitiveness.¹⁶

Evolution of the real effective exchange rate

10. **Using the CPI-based REER as indicator, Mauritania's competitiveness appears to have improved over the last fifteen years (Figure 2).** In real terms, the ouguiya has depreciated by an average 5 percent a year since 1985. However, the rate of real depreciation of the Mauritanian currency has slowed down in recent years. Following a depreciation of the ouguiya over 1997–99—including a step devaluation of 11.6 percent in July 1998 after it became obvious that the exchange rate was misaligned—the REER has gradually stabilized. In 2001, the ouguiya did not depreciate in real terms, as the depreciation vis-à-vis the U.S. dollar was compensated by real appreciation with respect to Asian partners, while it stabilized vis-à-vis the euro.

11. **The evolution of the REER has been broadly the same vis-à-vis major trading blocks (Figure 3).** Between 1985 and 2001, the REER for all partners fell by about 54 percent and by roughly the same amount, 56 percent, 49 percent and 51 percent, against the EU, Asia, and the United States. Fluctuations of these indicators at business cycle frequency tend to reflect exchange rate variations among the major currencies.

12. **The real depreciation of the ouguiya over the past fifteen years may be explained by a steady nominal depreciation partly offset by a positive inflation differential.** A positive inflation differential is true only if Brazil (a competitor with Mauritania in iron ore) is excluded from the sample. In this case, the real depreciation of the REER (of about 5 percent since 1985) is accounted for by a positive inflation gap (of over 3 percent) with a sharp 8.5 percent annual rate of depreciation. However, with Brazil part of the sample, Mauritania's average rate of real depreciation is accounted for by an average nominal depreciation of 3.5 percent coupled with a negative inflation differential of over 1 percent.¹⁷ Figures 4 and 5 illustrate the two cases as they decompose the REER into two components: the nominal effective exchange rate and the inflation gap vis-à-vis trading partners.

¹⁶Nonprice competitiveness, though beyond the scope of this chapter, is obviously also a major issue in Mauritania, as improvements in the quality of products and knowledge of foreign markets are deeply needed.

¹⁷The rationale for including Brazil in the sample is that it competes with Mauritania on third markets for iron ore. Though the weight is a modest 3.3 percent, Brazil's very high rates of inflation and nominal depreciation up to the mid-1990s have a large effect on the sample.

Figure III.2. Mauritania: Monthly CPI-Based Real Effective Exchange Rate Index, 1980–2001
(1990 = 100)

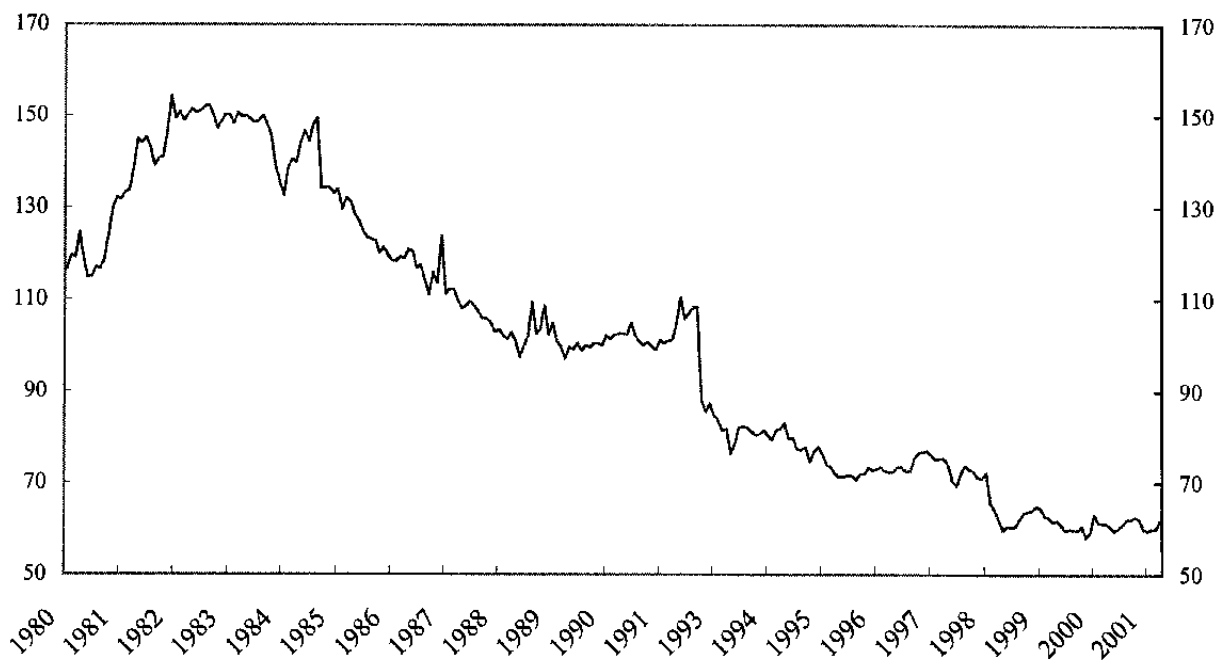
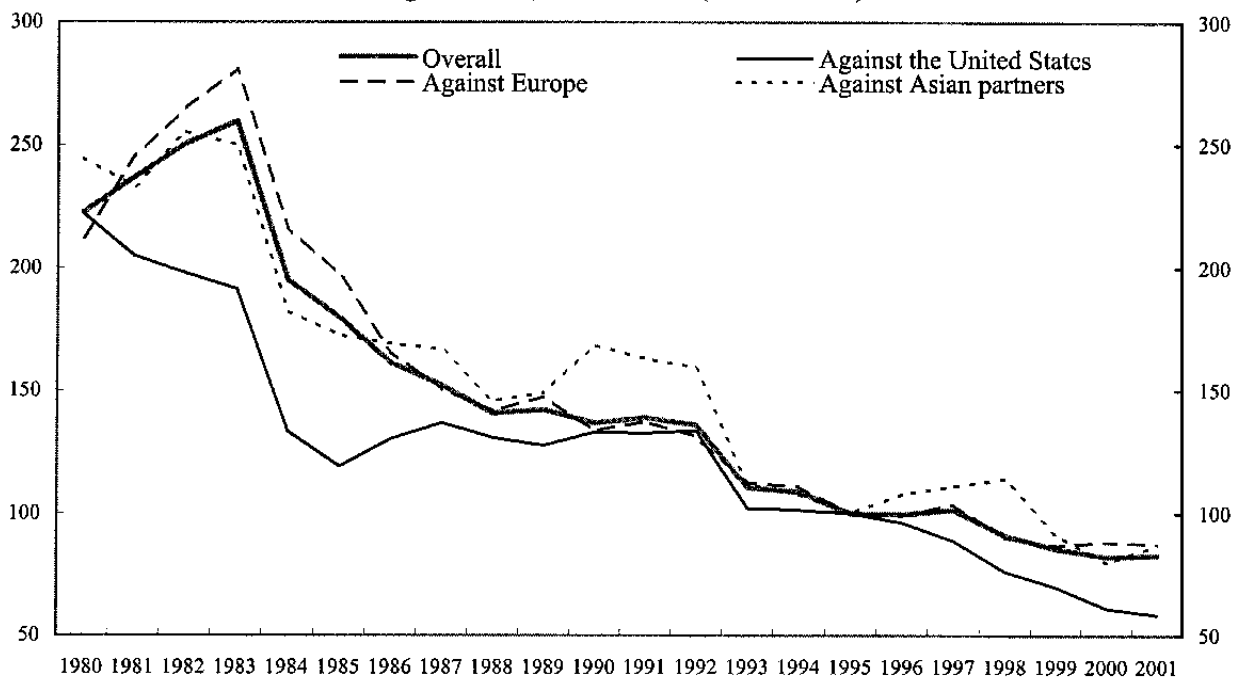
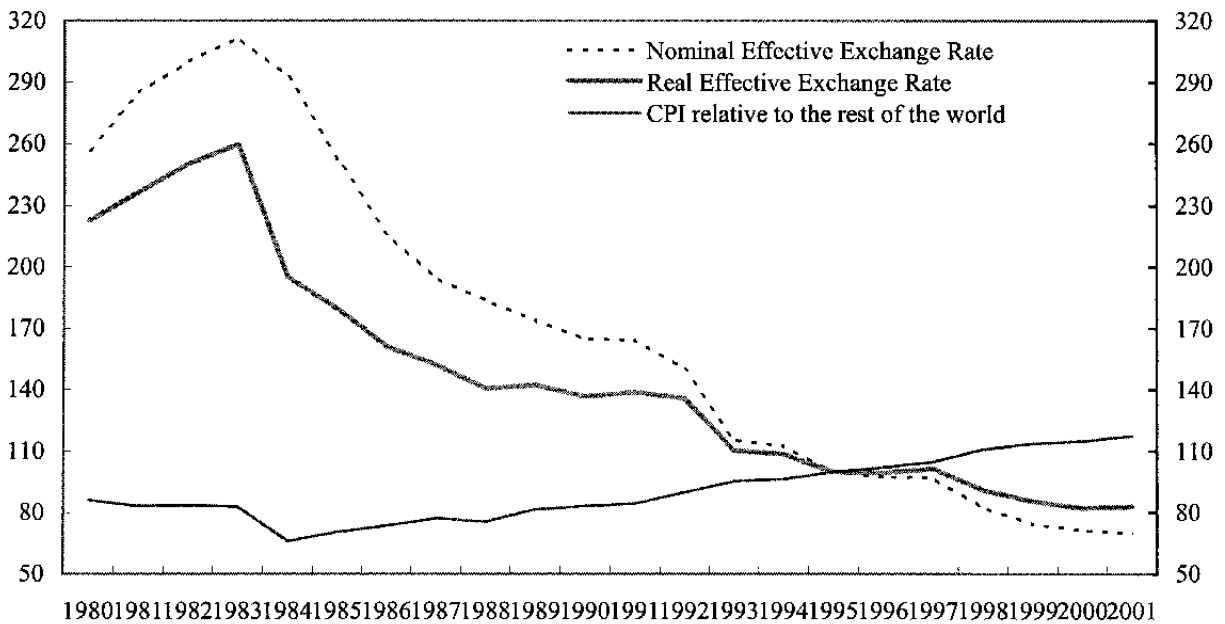
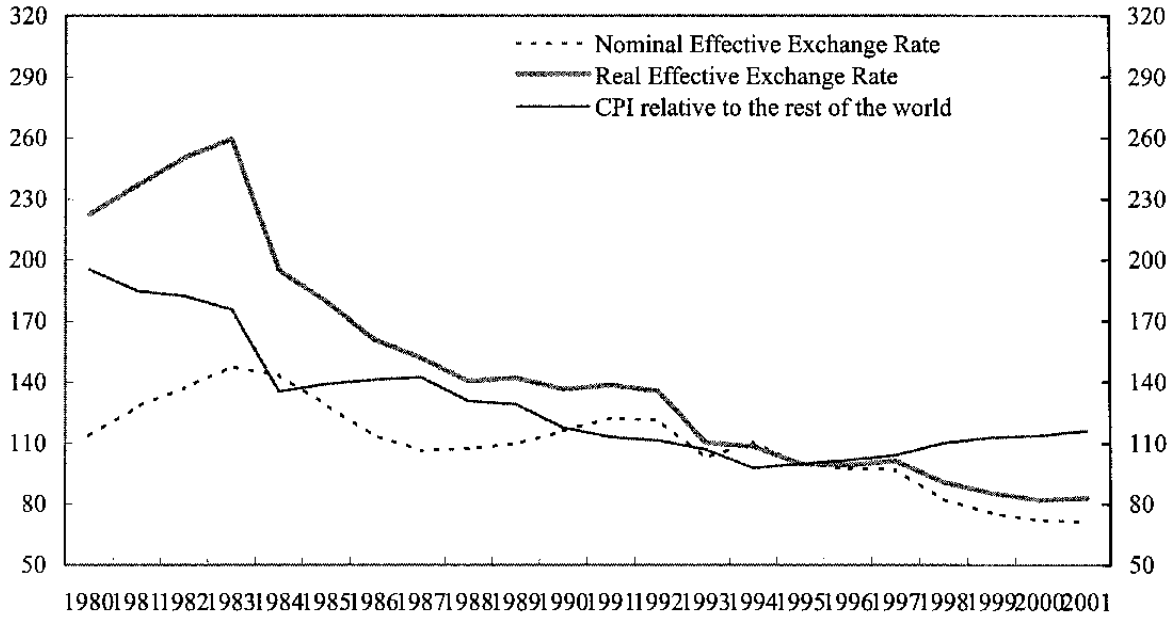


Figure III.3. Mauritania: CPI-Based Real Effective Exchange Rate Indices by Trading Partners, 1980–2001 (1995 = 100)



Source: Information Notice System, IMF.

Figure III.4. Mauritania: Decomposition of Real Effective Exchange Rate Indices, 1980–2001
(With Brazil in the Sample)



Source: Information Notice System, IMF.

13. **Compared to a number of selected competitors, Mauritania's REER has depreciated similarly or more rapidly over the last decade** (Figures 6, 7, and 8). Among other major iron producers, Mauritania has gained competitiveness against China and to a lesser extent Australia and South Africa. Meanwhile, the continuous decline of Mauritania's REER over the 1990s roughly matched the effects of the sharp step devaluation of the CFA franc in 1993, as evidenced by a comparison between Mauritania's and Senegal's REER. Competitiveness has also been gained by Mauritania against Morocco over the decade.

14. **Alternative REER measures are reported in Figure 9, based on GDP deflators, export deflators, and non-oil export deflators.**¹⁸ The behaviors of the CPI and GDP deflator-based indicators closely parallel each other, while the two export deflator-based indicators show a different pattern—namely, a real appreciation by the mid-1990s followed by a stabilization. However, the latter two do not seem to measure competitiveness, as they appear to reflect, given their similarity, the terms of trade since the early 1990s (Figure 10). Rather, they may be seen as measuring the relative price of Mauritania's products on world markets. This view is consistent with Mauritania being mostly a pricetaker.

Iron ore

15. **Mauritania's share of world iron ore production has remained small and broadly constant during the past decade**, at just above 1 percent (Tables 1 and 2).¹⁹ This happened despite the collapse of the Russian market share after the fall of the Soviet Union in 1992²⁰ and despite the above-mentioned marked improvement in Mauritania's exchange rate competitiveness against competitors in the iron ore market.

¹⁸All REER indicators have been computed on the basis of a weighted basket of 16 countries, which include Mauritania's main competitors, and with weights drawn from the Fund INS system.

¹⁹Due to data limitations, competitiveness is being assessed on the basis of production data. This should not pose any serious problem if we assume that the shares of exports to production remain broadly constant.

²⁰The drop in Russia's share was some 10 percentage points and was filled mainly by China, Australia, and Brazil—other major producers of iron ore.

Figure III.6. Mauritania with Russia and China

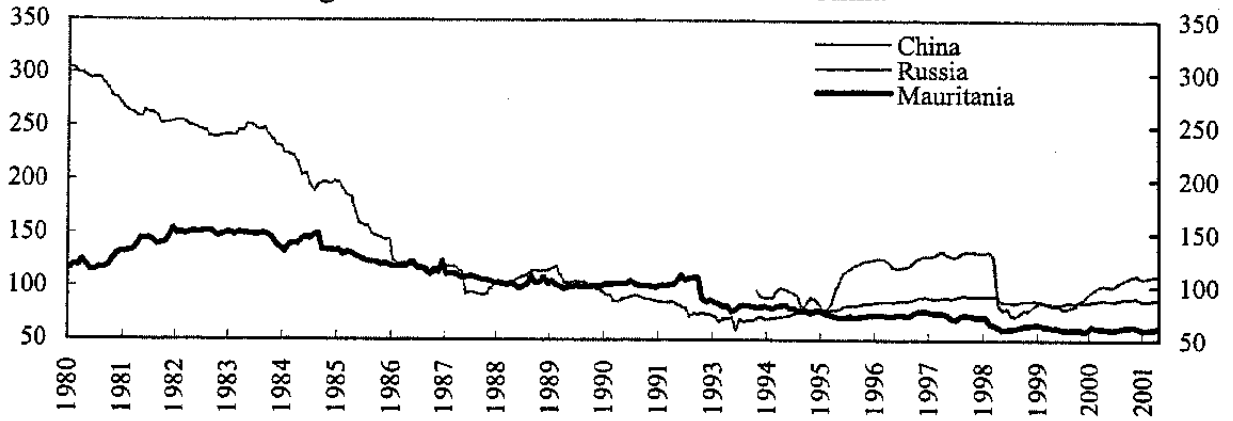


Figure III.7. Mauritania with Australia, Brazil, and South Africa

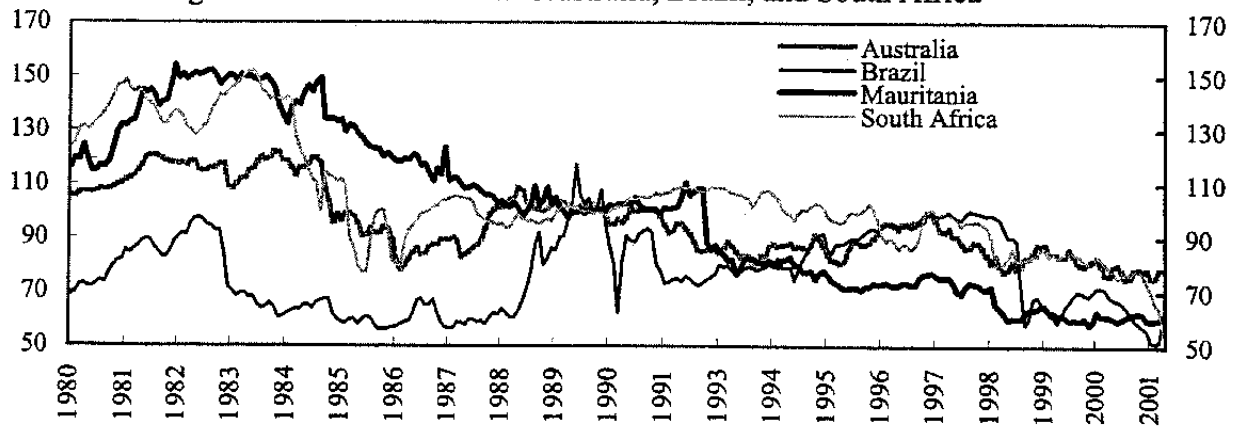
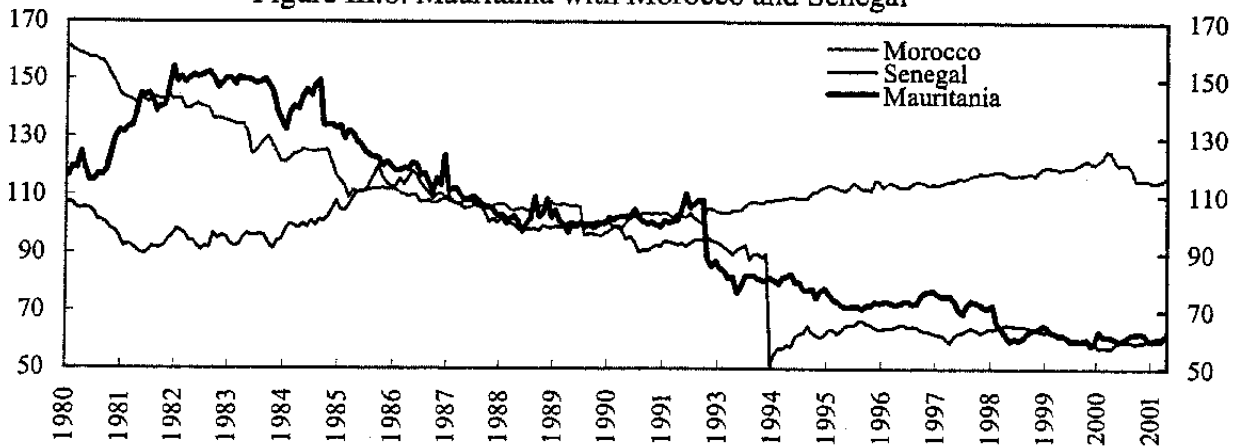


Figure III.8. Mauritania with Morocco and Senegal



Source: Information Notice System, IMF.

Figure III.9. Mauritania: Real Effective Exchange Rate Indicators, 1980–2001
(1995 = 100)

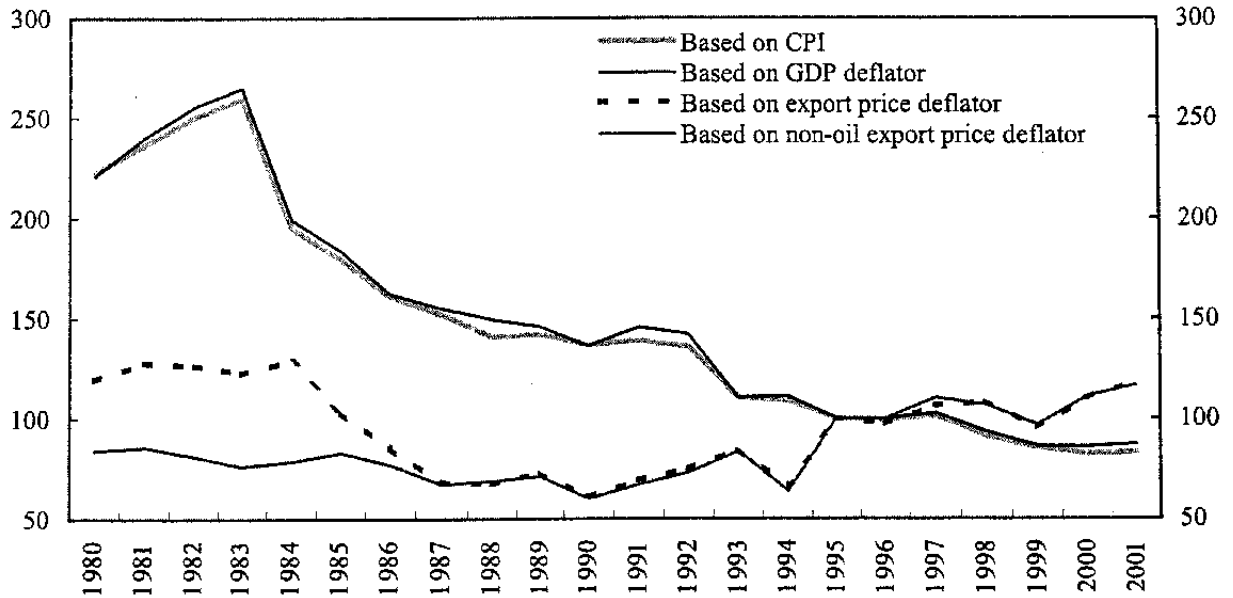


Figure III.10. Mauritania: Terms of Trade and REER
Based on Export Deflator, 1980–2001 (1995 = 100)

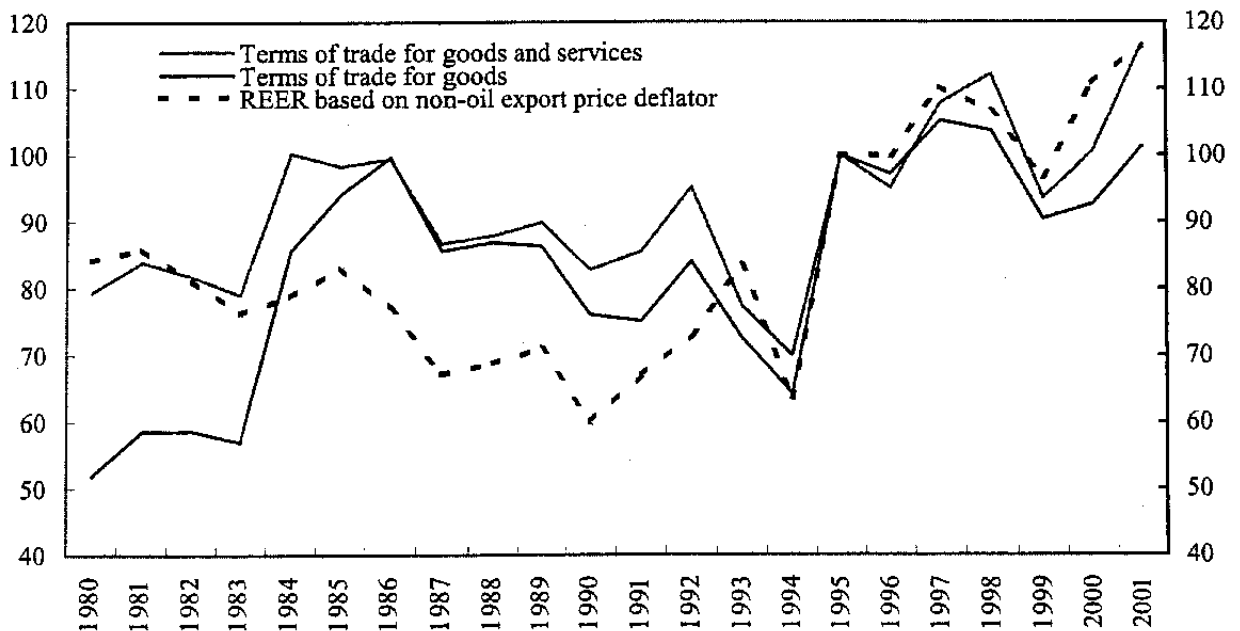


Table III.1. Mauritania: World Iron Ore Production
(In thousands of metric tons, gross)

Year	World	Mauritania	Australia	Brazil	China	Russia	South Africa
1990	983.0	11.6	110.5	152.3	168.3	236.0	30.3
1991	995.6	10.2	117.1	151.5	176.1	199.0	29.1
1992	925.0	8.2	112.1	146.4	197.6	82.1	28.2
1993	953.3	9.4	120.5	150.0	234.7	76.1	29.4
1994	991.9	9.7	128.5	177.3	240.2	73.3	30.5
1995	1,034.5	11.3	142.9	183.8	249.4	78.8	31.9
1996	1,017.5	11.4	147.1	174.2	249.6	72.1	30.9
1997	1,069.6	11.7	157.8	185.1	268.0	70.9	33.2
1998	1,062.3	11.4	154.0	207.0	247.0	72.3	32.9
1999	993.6	10.4	155.0	190.3	209.0	81.3	29.5

Table III.2. Mauritania: Shares in World Iron Ore Production
(In percent)

Year	Mauritania	Australia	Brazil	China	Russia	South Africa
1990	1.2	11.2	15.5	17.1	24.0	3.1
1991	1.0	11.8	15.2	17.7	20.0	2.9
1992	0.9	12.1	15.8	21.4	8.9	3.0
1993	1.0	12.6	15.7	24.6	8.0	3.1
1994	1.0	13.0	17.9	24.2	7.4	3.1
1995	1.1	13.8	17.8	24.1	7.6	3.1
1996	1.1	14.5	17.1	24.5	7.1	3.0
1997	1.1	14.8	17.3	25.1	6.6	3.1
1998	1.1	14.5	19.5	23.3	6.8	3.1
1999	1.0	15.6	19.2	21.0	8.2	3.0

Source: Commodity Reference Bureau Yearbook, 2001.

16. **It appears that Mauritania's share of world iron ore exports showed little sensitivity to aggregate exchange rate movements.** This may be partially explained by the fact that Mauritania mainly exports low-grade ore, the demand for which is relatively stable. Besides, SNIM has been operating at levels close to full capacity during the last decade, and therefore Mauritania's iron ore production could not have increased considerably, even in response to favorable changes in the aggregate real exchange rate.

17. **Data on the state mining company's (SNIM) costs in fact suggest that competitiveness of the mining sector has been stable since the mid-1990s** (Table 3). When expressed in U.S. dollars, the unit cost of iron ore production has remained broadly unchanged since 1994. In ouguiyas, the unit cost increased markedly over the same period (by over 10 percent per year on average), much more than the CPI. This seems related to a number of factors, including the pass-through effects on input prices of the 1997–99 depreciation and a 15 percent increase in wages that are at the low end of the scale, in August 1998. However, a major expansion project is currently under way, including an upgrade in equipment, which should raise productivity and improve competitiveness in the medium term.

Table III.3. Mauritania: SNIM's Production Costs

	1994	1995	1996	1997	1998	1999	2000	2001
Sales								
(in millions of metric tons)	10.3	11.5	11.1	11.7	11.4	11.0	11.1	10.1
Cost of goods sold								
(In billions of ouguiya)	11.2	11.8	13.4	14.2	15.5	16.5	21.5	23.3
Personnel expenses								
(In billions of ouguiyas)	3.4	3.5	3.6	3.9	4.4	4.3	4.3	4.9
Unit cost								
(In thousands of metric tons)	1.42	1.33	1.53	1.55	1.75	1.88	2.33	2.80
Unit cost (US\$/metric ton)	11.5	10.3	11.1	10.2	9.3	9.0	9.8	11.0

Source: SNIM.

Fishery sector

18. **Evaluating the competitiveness of fish exports is hindered by data limitations and by other nonprice factors.** Mauritania's share of world fish exports has been small, increasing from about 0.3 percent in the 1970s to 0.5–0.75 percent during the 1980s, but then falling back to about 0.3 percent by the late 1990s (Table 4).

19. **While the movements in the exchange rate may have played a role, they cannot explain the large swings in the market shares.** For example, the strong depreciation of the REER against Asian trading partners during the 1980s may have had an impact on fish exports and its market share. However, the decline in the market share in the mid-1990s was attributed to a great extent to the near collapse of the sector on account of overfishing that led to a substantial reduction in production. In addition, given that the bulk of cephalopods exports are to Asia (mainly Japan), the Asian crisis may have also reduced the demand for Mauritania's fish. As for Mauritania's competitiveness vis-à-vis its major African regional competitors in the fish market, it appears that it has been maintained during this period, as

demonstrated by the relatively favorable evolution of the REER against significant producers such as Senegal or Morocco (Figure 8).²¹

Table III.4. Mauritania: World Fish Exports
(In millions of U.S. dollars)

Year	World	Mauritania	Mauritania's share
			(In percent)
1970	3,002	7.4	0.25
1975	4,460	15.9	0.36
1985	17,254	126	0.73
1990	35,297	119.7	0.34
1991	35,895	227.2	0.63
1992	36,109	244.3	0.68
1993	35,967	220.6	0.61
1994	41,363	207	0.50
1995	45,832	279.9	0.61
1996	46,471	276.8	0.60
1997	46,792	196.5	0.42
1998	45,352	140.6	0.31
1998	...	154.8	...
2000	...	149.1	...

Sources: UNCTAD 1995 Yearbook; and International Trade Statistics Yearbook.

Conclusion

20. **Overall, it appears that Mauritania's competitiveness has been maintained, although vigilance is required to prevent any reversal in the real effective exchange rate.** Mauritania's REER has remained broadly stable since 1999, including vis-à-vis European partners. Resisting real appreciation will be crucial in the future, especially in view of the narrow export base and the authorities' intention to develop new nontraditional exports, as highlighted in Mauritania's PRSP.

²¹Africa accounts for four percent of world fish exports, and besides Mauritania, major exporters are: Morocco (1.4 percent), Namibia (0.7 percent), Senegal (0.4 percent), Côte d'Ivoire (0.25 percent), and Madagascar (0.1 percent).

C. Exchange Rate Policy

21. **As a general feature, given Mauritania's exposure to idiosyncratic shocks, some nominal exchange rate flexibility seems desirable.** The current account appears somewhat sensitive to terms of trade shocks originating in either changes in export prices (iron ore, fish) or variations in oil prices. In addition, Mauritania is exposed to significant real supply shocks, such as droughts or unexpected drops in fish catches (e.g., due to overfishing). Nominal exchange rate adjustments can help dampen the consequences of terms of trade or real shocks, as wage and price flexibility is likely to be low in the Mauritanian economy, and nominal exchange rate moves may significantly accelerate real exchange rate adjustments when needed. In addition, a degree of flexibility of the nominal exchange rate also helps to avoid unintended real exchange rate appreciation and more generally to maintain competitiveness of the tradable sector.

22. **Meanwhile, the authorities are warranted in providing guidance to the foreign exchange market.** The market remains thin and shallow. Exchange rate risks cannot be easily dealt with, as hedging instruments and forward contracts are underdeveloped. A policy of exchange rate neglect would open the door to larger swings in the value of the currency, a higher volatility of inflation, and increased transaction costs, which would hinder the development of foreign trade and investment. The need for both flexibility and guidance in exchange rate management thus supports the continuation of the managed float regime adopted by Mauritania, whereby the central bank fixes the official rate by pondering market trends and policy objectives.

23. **In its daily operations, the central bank has tended to focus the exchange rate policy on the rate of exchange between the ouguiya and the U.S. dollar.** It can indeed be shown that the dollar value of Mauritania's currency has been empirically more stable than its value in euros or in yen. Over the past twenty years, though the ouguiya has exhibited a downward trend against all three major currencies, exchange rates *variability around these trends* has been somewhat lower in the case of the U.S. dollar (Table 5). This suggests that exchange rate policy is *de facto* formulated vis-à-vis the U.S. dollar. Such a feature clearly distinguishes Mauritania from its neighbors, the currencies of which, by contrast, are least variable against the euro (or, before 1999, against the French franc). Not surprisingly, the contrast is observed with members of the CFA zone such as Senegal or Mali, and a significant difference can also be found between the ouguiya and the Moroccan or Tunisian currencies, which are much more stable vis-à-vis the euro than the U.S. dollar.

Table III.5. Mauritania: Historical Variability of the Exchange Rate, 1980–2001

	Relative variability to the U.S. dollar	Relative variability to the yen	Relative variability to the euro ²²
Mauritania	19.4	45.4	35.3
Mali and Senegal	36.5	39.7	23.8
Morocco	35.1	52.9	12.0
Tunisia	27.2	56.8	16.1

Note: The variability of a given exchange rate is measured as the variance of the annual percent change of the exchange rate. Let $V_{i,\$}$, $V_{i,\text{€}}$, and $V_{i,\text{¥}}$ denote the variability of currency i (e.g., the ouguiya) to the U.S. dollar, the euro and the yen respectively. The figure reported is the relative volatility to the U.S. dollar. It is calculated as the ratio of the variability to the U.S. dollar to the sum of the variability with respect to the U.S. dollar, the yen and the euro, that is as $V_{i,\$} / (V_{i,\$} + V_{i,\text{€}} + V_{i,\text{¥}})$.

24. **In the future, the authorities could consider giving more weight to the euro in their daily management of the exchange rate.** Indeed, Europe currently accounts for the largest share of Mauritania’s trade—about two-thirds—with European countries being the sole recipients of iron ore exports and providing almost all Mauritanian imports except oil. Export proceeds are usually received in U.S. dollars, but a more predictable exchange rate between the ouguiya and the euro could help exporters tailor their contracts to European customers, e.g., by varying features other than the price.

25. **Moreover, potential trade in agricultural, livestock, or fish processed products is likely to be developed mostly with the euro zone.** In particular, the development of export processing zones, as recently adopted in the context of the recently amended Investment Code, will likely involve mainly trade with European countries. To a lesser extent, trade may also be developed with African neighbors, the currency of which is closely linked to the euro. Avoiding a real appreciation against the euro will therefore be key in maintaining the competitiveness of currently exporting sectors, particularly iron ore, and promoting a diversification of the export base.

²²Before 1999, the euro is assimilated to the French franc. Alternative calculations with the Deutsche mark instead do not alter the conclusions.

26. Other factors than trade in goods also militate in favor of giving more weight to the euro:

- Services and transfers from and to abroad often involve transactions in euros. For instance, the agreement reached in July 2001 fixed the amount of fishing royalties in euros.
- Tourism, one of the activities in which domestic and foreign investors are interested in Mauritania, will be principally geared to European customers.
- Finally, as with potential trade, foreign direct investment should be mostly expected from countries belonging to the euro zone or loosely linked to it, rather than from “dollar zone countries”. The profitability of such investments will be more secure with a more predictable exchange rate of the ouguiya to the euro.

27. Overall, a number of arguments favor paying more attention to the euro value of the ouguiya. At the same time, this is a matter of degree rather than principle, as the U.S. dollar currently remains the main currency used for transaction purposes. Giving more weight to the euro would thus involve a closer monitoring of real effective exchange rate developments by the central bank.

THE HISTORY OF FOREIGN EXCHANGE MARKET REFORMS

28. This Appendix provides some background on the steps recently taken by Mauritania in liberalizing its exchange systems and heading toward a market-oriented determination of the exchange rate. Developments in the exchange market since 1995 are reviewed, along with a discussion of the most recent issues.

29. **Until 1995, the Mauritanian foreign exchange market had remained highly centralized.** The central bank (*Banque Centrale de Mauritanie*) was exercising heavy control over both the supply and use of foreign exchange. Most export proceeds had to be surrendered to BCM, while licenses were needed to purchase imports. In addition to the official market, a limited cash market was run by commercial banks, and a parallel cash market was tolerated, with the rates differing between the three markets.

30. **A first round of reforms was introduced between 1995–98 but did not go far enough at unifying the foreign exchange market.** The central bank established an interbank foreign exchange market in 1995, merging the two-tier exchange system in which the official market was led by the central bank and the cash market by commercial banks. Important reforms followed including: (i) marginally reducing surrender requirements on nonmineral export proceeds; (ii) introducing participation of foreign exchange bureaus in the cash market; and (iii) loosening controls on foreign exchange transactions by allowing commercial banks to sell foreign exchange for foreign transactions. However, these measures proved insufficient to prevent market segmentation, as banks withdrew completely from the cash market. A sharp decline in export proceeds in 1998 (by 12 percent) further complicated the situation, which led the central bank to limit the sale of foreign exchange and return to the application of nonmarket rates. The ouguiya became overvalued, and the spread between the official rate and the parallel market rate increased.

31. **In response, new measures were introduced to increase the supply of foreign exchange by eliminating some market restrictions.** These measures also aimed at improving the operation of the foreign exchange market and at gradually restoring market confidence in the ouguiya.²³ They included:

- Gradually reducing surrender requirements on both mineral and nonmineral export proceeds to the central bank;
- Allowing residents to open foreign currency deposit accounts with commercial banks;
- Eliminating restrictions on foreign exchange sales for travel abroad;
- Adjusting the limits on commercial banks' net open position in foreign exchange to international standards; and

²³These new reforms were preceded by a significant devaluation of the ouguiya in 1998 (see above).

- Eliminating the statistical visa and transferring the function of statistical monitoring of exports to customs.

The credibility of these measures was reinforced by the decision to eliminate foreign exchange restrictions on all current account transactions by accepting the obligations of Article VIII of the Fund's Articles of Agreement in July 1999.

32. The introduction of the Manual Exchange Market (MEM) in the last quarter of 1999 ushered efforts to reconnect the interbank and the cash markets. The liberalization efforts introduced so far did not succeed in bringing commercial banks and the bureaus of exchange to operate in the same market: (i) banks continued to work directly with their clients and with the central bank in the official noncash market (with the BCM strongly influencing the market through the selling rate); and (ii) foreign exchange bureaus continued to operate separately in the cash market, where the cash market rate (and the parallel rate) of the ouguiya continued to depreciate. The increasing gap between the official rate and the parallel market rate prompted the authorities to establish the MEM at the central bank and use it as a channel to supply foreign exchange to the cash market at competitive rates. Whenever the spread increased to more than 10 percent, the central bank was to buy foreign currency in the noncash market and sell it to exchange bureaus in the manual cash market. As a result, the spread between the official and the cash rates declined to about 4 percent between October 1999 and March 2000 (Figure 1). However, the foreign exchange market remained segmented, and the arbitrator role of the central bank did not disappear.

33. To include banks in the daily sessions of the foreign exchange market at the central bank, the MEM was replaced by the Expanded Exchange Market (EEM) in April 2000 (Box 1). Initially, participation of banks in the EEM was limited to newly established smaller banks, while larger banks continued to rely mainly on their own clients for their needs in foreign exchange. Furthermore, all banks continued to buy foreign exchange at the central bank at the official rate—the rate of the previous session—for certain types of operations (in particular those in connection with authorized personal travel allocations). To deepen the market and increase competition in the EEM, the central bank introduced a sequence of new measures, including:

- Completely eliminating surrender requirements;
- Banning central bank sale of foreign exchange to banks outside the EEM;
- Raising the ceiling on exchange bureaus participation limits;
- Freeing movement of export proceeds deposited in domestic banks; and
- Reducing the BCM buying-selling margin to 1 percent.

In addition, the BCM encouraged the largest exporter in the country, the mining company SNIM, to participate in the EEM by meeting progressively its needs in ouguiya in this market

through commercial banks. This action was meant not only to increase supply of foreign exchange in the EEM, but also to reduce the direct supply of foreign exchange from SNIM to banks, thus forcing them to come more often to the market.

The Functioning of the Expanded Exchange Market

The Expanded Exchange Market (EEM) was established in April 2000 in order to create a unified and deeper foreign exchange market. Both banks and exchange bureaus take part in the EEM. Permission to participate in the EEM is granted by the central bank and necessitates a deposit of 2.5 percent of the equivalent of US\$20,000 in ouguiyas. Each participant in the EEM opens both an account in U.S. dollars and an account in local currency at the central bank.²⁴ Transactions are then completed through transfers between these accounts.

Sessions of the EEM occur daily Monday through Thursday. At each session, exchange bureaus are allowed a maximum of one buying bid and one selling bid. The same restriction applies to banks with regard to their own operations, but additional orders may be placed on behalf of the banks' customers. Buying and selling orders consist of a bid price and a required amount in multiples of US\$1,000, with a minimum bid of US\$5,000. Banks may not make orders of an amount exceeding 8 percent of their net equity capital while since November 2001, there has been no limit to the amount of foreign currency required by exchange bureaus.²⁵ Usage of foreign currency traded in the EEM is free. However, cash withdrawals from accounts in U.S. dollars are subject to a 1 percent commission (0.75 percent for travelers checks).

The central bank acts as the system supervisor: it collects the bids, manages the transactions and disseminates the information to participants. In practice, the central bank and SNIM are the only suppliers of foreign currency. The central bank currently determines the daily rate on the basis of a number of considerations, including the evolution of supply and demand in the EEM, the prospects for inflation, the level of reserves, and the maintenance of competitiveness.

²⁴However, the state mining company (SNIM) only holds an account in foreign currency.

²⁵However, for orders exceeding US\$20,000, an additional deposit must be made (of 2.5 percent of the amount in excess of US\$20,000). The central bank would keep the deposits were the exchange bureau eventually unable to perform the transaction.

IV. MONETARY OPERATIONS AND POLICY ISSUES²⁶

1. This chapter deals with the monetary policy framework in Mauritania. Following an overview of the current framework (Section A), a simple model is developed to help assess the consequences of monetary decisions (Section B). The model is then used to simulate the medium-run effects on monetary aggregates of the anticipated reduction in government deposits placed at commercial banks (Section C). Section D concludes.

A. Overview of the Current Monetary Policy Framework²⁷

2. **The primary objective of Mauritania's monetary policy is the maintenance of a low and stable inflation rate.** However, the central bank (BCM) monitors also other objectives, including the exchange rate, external competitiveness, the level of international reserves, and the cost of borrowing. The BCM takes a pragmatic view on how to address the trade-offs, which may appear between these various objectives, provided that the commitment to macroeconomic stability is fully preserved.

3. **Monetary policy is being implemented by using indirect instruments to influence money market conditions.** The following tools are currently available to the BCM:

- *T-bills auctions* are the instrument of choice for the monetary authorities. Indeed, T-bills are not issued primarily for the purpose of financing budget deficits but essentially for liquidity management purposes. Auctions occur fortnightly, with two maturities offered (usually a 2-week maturity and a longer-term one, such as 6-week or 8-week).
- *Repurchase agreements (repos)* serve as the main refinancing instrument for banks and can be used flexibly by the BCM to inject liquidity between T-bills sessions. The repo rate (which has been mislabeled the discount rate) can be seen as BCM's key indicative rate.²⁸
- *Changes in reserve requirements* are not used as a regular monetary tool, but may be used occasionally. Required reserves are currently set at 4.5 percent of total deposits (both private and public deposits since October 2001).

²⁶Prepared by Nicolas Carnot.

²⁷Mauritania has benefited from a number of MAE technical assistance missions in recent years. This section draws on their conclusions as well as on the most recent developments.

²⁸Only a few repo operations have been conducted since their inception in 1998. However, the legal framework for repo transactions has only been put in place in 2001, along with a reverse repo window.

4. **The transmission channels of monetary policy are not well known.** Discussions with the authorities suggest three distinct mechanisms through which monetary moves may affect the economy:

- A traditional interest-rate effect, whereby changes in interest rates influence spending and the demand for credit by firms and households.²⁹
- A credit channel, reflecting the consequences of liquidity changes on the supply of credit by banks. This mechanism could be important in Mauritania in the absence of alternative financing sources such as bond or equity markets.
- An exchange rate channel, including the pass-through effects of import prices on domestic inflation and the influence of competitiveness on foreign trade.

5. **The conduct of monetary policy is managed by a monetary committee.** Monetary policy currently lacks a well-articulated and flexible operational framework. Reserve money often plays implicitly the role of an operational target and broad money that of an intermediate target, since the monetary program targets these variables. Yet, there are instances where the authorities give prominence to targeting the money market interest rates, possibly accepting as a consequence sharp moves in reserve money.³⁰

6. **Money markets remain relatively underdeveloped.** A secondary market for T-bills is yet to emerge, and the interbank deposit market does not function efficiently. In fact, it seems there has been no interbank operation over the past year.³¹ This situation may be partly explained by the lack of willingness of banks to lend to competitors. As a rule, banks rely mostly on operations with the central bank to meet their liquidity needs.

7. **Overall, the banking system appears only moderately driven by market forces.** Such a system provides the central bank with relatively large discretionary power to meet a given operational target at a given point in time, such as the T-bills rates or reserve money. However, this comes at the cost of diminishing the role of price signals and reducing market efficiency. Such problems may contribute to the poor overall performance of the financial sector, as evidenced by the high cost of borrowing (with real interest rates of about

²⁹The magnitude of this effect can hardly be assessed, however, given the weaknesses of investment data and the extent of financing through the informal sector.

³⁰For instance, in the context of a very low inflation, in the last quarter of 2001 the BCM reduced sharply the amount of treasury bills issued entailing a significant increase in excess reserves, thus triggering a 6 percentage point reduction in T-bills rates (from about 10 percent to about 4 percent). In that case, reserve money was essentially treated as a residual, with T-bills rates taking precedence as the operational target.

³¹In addition, the interbank rate, which should normally lie between the repo and the reverse repo rates, tended to be equal to or higher than the repo rate in the past.

15 percent), large interest spreads (between lending and borrowing rates), and widespread informal financing.

8. **A specific issue for current monetary management relates to the accumulation of government deposits in the banking system.**³² A significant share of these deposits (about 17 percent of the total at end-2001, equivalent to 5.5 percent of GDP) are placed at commercial banks. While these deposits have been an important source of liquidity for banks, they also raise a number of concerns³³ and are therefore expected to be gradually reduced, either by transferring them to the central bank or simply through increased public spending in the medium-run. This will pose a number of challenges for monetary operations.

B. Quantitative Monetary Framework

9. **A stylized model of the interaction between money supply and demand has been developed.** This framework can be thought of as a simplified monetary survey. It reflects the crucial role played by banks in the financial system as well as their heavy reliance on the BCM for their liquidity management. A distinction is made between exogenous inputs (e.g., net foreign assets of the BCM), exogenous policy decisions (such as the stock of T-bills or government deposits at commercial banks) and endogenous outcomes, including reserve and broad money, private deposits, credit to the private sector, and an interest rate representative of monetary conditions. Key money multiplier relationships are emphasized, with a view to investigating the effects of monetary policy decisions on broader money and credit aggregates. The model involves mainly definitional equations and accounting identities, supplemented by a few behavioral equations—to be specific, a money demand function and a demand for excess reserves. The parameters of the model are calibrated on the basis of past averages and institutional constraints.³⁴

10. **This framework may help the formulation of monetary policy in two regards:** first, as a quick fix for building a simplified monetary program focusing on key assumptions and the main aggregates; second, as a simulation tool to investigate the possible consequences of various monetary moves on the banking system. With a view to illustrating the properties of the model, two such simple simulations are presented in the remaining part

³²The build-up of these deposits has coincided with increases in nontax revenues following the signing of fishing agreements with the EU in 1996 and more recently in July 2001.

³³Five potential problems have been identified: (i) a possible sudden withdrawal of these deposits given the vulnerability of the Mauritanian economy to external shocks; (ii) the lack of safety in the event of bank failure; (iii) the resulting complications for liquidity and monetary management; (iv) the possibility that these deposits support weak banks and diminish incentives for warranted restructuring; and (v) the fact that in the absence of remuneration, these deposits can be construed as a subsidy.

³⁴The model is laid out in detail in Appendix II.

of this section: (i) a T-bills auction; and (ii) a reduction in reserve requirements.³⁵ The following section then uses the framework to study the issues raised by the likely reduction of government deposits at commercial banks in the medium-run. The illustrative nature of these simulations should be stressed, as the model relies on quite rough assumptions and a somewhat mechanical behavior of the various actors.

11. **The first simulation depicts the effects of withdrawing UM 1 billion in T-bills from the market.** As stated above, T-bills auctions are the main intervention tool used by BCM to regulate liquidity and control the money supply. The simulation examines the impact of injecting liquidity in the banking system through reducing the net issuing of T-bills by UM 1 billion. The results are as follows (Table 1):

- An equal increase in reserve money, which expands by UM 1 billion. Through the money multiplier, this stimulates a larger expansion in other monetary aggregates, including broad money and credit to the private sector.³⁶
- A fall in the interest rate as a result of easing monetary conditions. The reported quantitative effect (-1.8 percentage point), though plausible, should not be taken at face value, since alternative simulations suggest a notable sensitivity to the choice of parameters.

Table IV.1. Mauritania: Net Withdrawal UM 1 billion in T-bills

	Absolute Variation (In billions of ouguiyas)	Variation (In percent)
Reserve money	1.0	10.2
Broad money	2.9	7.5
Credit to the private sector	2.9	4.1
Interest rate (in percent)	-1.8	...

³⁵Reported simulation outcomes correspond to the difference between a baseline scenario, which is consistent with the monetary program under the PRGF arrangement, and an alternative simulation carried out under modified exogenous assumptions.

³⁶However, the percent growth in broad money is lower than that for reserve money (7.5 percent against 10.2 percent), since banks are more willing to hold excess reserves with the reduction in the opportunity cost of money.

12. **Table 2 reports the effects of lowering reserve requirements on both public and private sector deposits by 1 percent.** This measure could be considered by BCM as part of a package to prop up banks' liquidity:

- The lower reserve requirements free reserves within the banking system, which may be used for further lending activity. This results in an increase in both credit and private deposits. According to the simulation, broad money grows by 3.5 percent and credit to the private sector by 2 percent. The liquidity injection also triggers a decline in the interest rate by about 1 percentage point.
- The lower reserve requirement causes a shift in the demand for reserve money by banks. At the same time, however, the supply of reserve money by the central bank is assumed to remain unchanged.³⁷ Hence reserve money does not move at equilibrium, with the lower required reserves (UM 0.4 billion) being *ex post* offset by higher excess reserves (UM 0.2 billion) and an increase in currency in circulation (UM 0.2 billion).

Table IV.2. Mauritania: A One Percent Reduction of Reserve Requirements

	Absolute Variation (In billions of ouguiyas)	Variation (In percent)
Reserve money	0.0	0.0
Broad money	1.4	3.6
Credit to the private sector	1.4	2.0
Interest rate (in percent)	-0.9	...

C. Assessing the Risks of a Credit Squeeze in the Medium Term

13. **A medium-run scenario has been constructed to investigate the pressures that may emerge from the current accumulation of public deposits at commercial banks.** So far, the accumulation of these deposits has not had unfavorable side-effects, and it may in fact provide banks with cheap liquidity to extend private sector credit. However, the anticipated reduction of these deposits in the coming years could adversely affect the stability of the banking sector and their ability to extend credit, possibly triggering a credit crunch. To

³⁷Changes in the supply of reserve money originate in changes of either NFA or NDA in the central bank's balance sheet. Neither of these (exogenous variables) moves in this simulation.

gauge the magnitude of these potential effects, the above model is used to project monetary aggregates, particularly the impact on private sector credit.

14. The assumptions underlying the projections are consistent with the macro-framework of the PRGF program, and may be summarized as follows (Table 3):

- Over 2003–05, net foreign assets of the BCM would remain roughly constant in months of imports. This means that NFA would grow by an average UM 10 billion a year. This flow represents about half of the fishing royalties, and it is therefore assumed that they would be matched, at the level of the BCM’s balance sheet, by a similar rise of government deposits. This ensures that base money remains broadly constant over the projection (or in fact, is slightly rising), in line with the likely design of annual monetary programs.
- At the same time, the public sector deficit would gradually widen with the projected increase in public investment (mainly on priority sectors) and assuming increased implementation capacity. After taking into account the portion of fishing royalties (about half) that would be kept at the central bank, this rising deficit would only be partially covered by external financing and debt relief (in 2004–05). The government would thus start tapping deposits accumulated at commercial banks by 2004 in order to finance its increased spending capacity.
- Other exogenous assumptions (stock of T-bills, other items net...) as well as parameters from the model are assumed constant throughout the projection, at their last observed value.

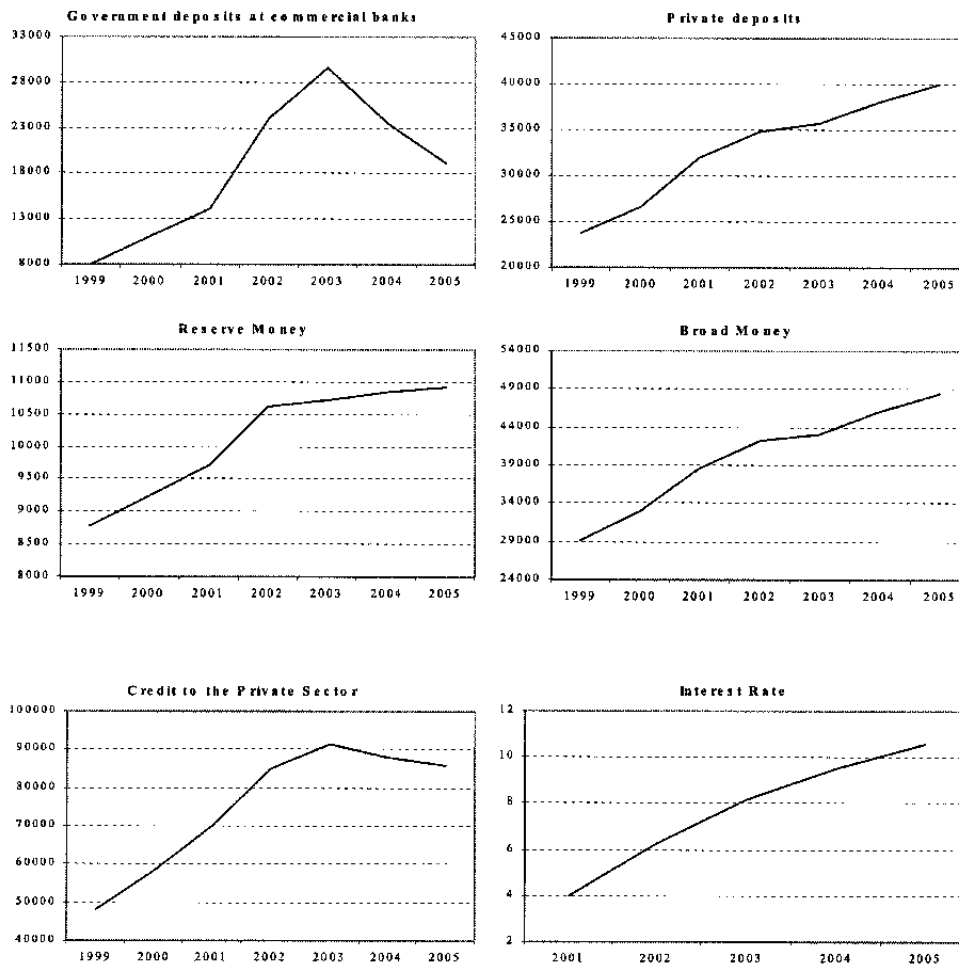
Table IV.3. Mauritania: Assumptions of Medium-Run Projections

(In billions of ouguiyas)

	2002	2003	2004	2005
Change in NFA at the central bank	24.6	5.1	13.6	10.2
Public balance	16.7	-6.4	-10.1	-14.9
Portion of fishing royalties saved at the central bank	23.0	5.0	13.5	10.1
Public balance, excluding saved portion of fishing royalties	-6.3	-11.4	-23.6	-25.0
External financing	18.7	17.2	19.4	22.0
Exceptional financing (debt relief)	14.8	19.7	16.5	16.3
External debt repayment (principal)	-14.8	-20.0	-17.7	-18.3
Domestic financing through commercial banks (- = surplus)	-9.9	-5.6	5.4	5.0

15. **In the absence of new policy actions, this baseline scenario, which may be interpreted as a natural continuation of current trends, leads to growing difficulties in the medium run with increasing interest rates and shrinking credit to the private sector.** In the short run (2002–03), current trends may be benignly continued as banks would still benefit from an inflow of public deposits. However, a break occurs in 2004, when banks start facing public deposit outflows. Banks would then have less free reserves to extend new credit and may face a liquidity squeeze. As a result, the currently rapid expansion of private credit would likely not be sustained and in fact, according to the simulations, credit may even contract. In addition, the increased competition between banks to get liquidity would lead to a gradual rise in interest rates (Figure 1).

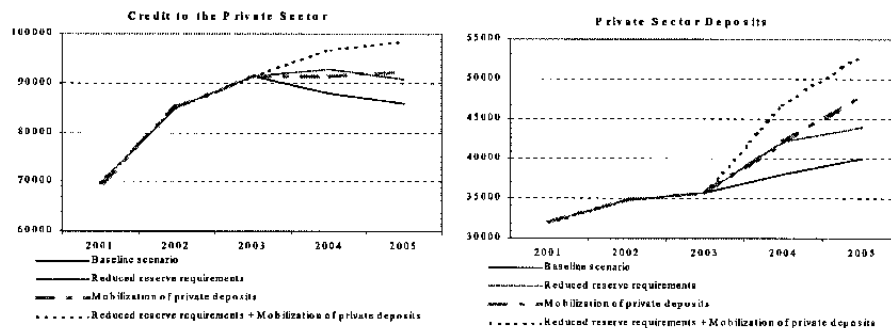
Figure IV.1. Mauritania: Medium-Run Evolutions Under Baseline Scenario
(End of period data)



16. **These problems could be somewhat mitigated by lowering banks' reserve requirements and more important through further efforts by banks to mobilize private deposits.** This can be illustrated by comparing the outcomes of various alternative simulations to the baseline scenario (Figure 2):

- One action that could be taken by the monetary authorities would be to reduce reserve requirements from their current level of 4.5 percent. Figure 2 reports the effects of lowering the required ratio to 2 percent. This would provide temporary relief to banks by freeing part of their reserves, which may then be used to support lending.³⁸
- On the part of banks, additional efforts to attract private sector deposits could partly compensate the withdrawal of public deposits. Such a development would be consistent with efforts to deepen financial intermediation in Mauritania.³⁹ The simulation reported in Figure 2 assumes an increase of about 20 percent of private deposits over 2004–05, compared with the baseline scenario.⁴⁰
- A combination of these two assumptions (further mobilization of deposits and reduced reserves requirements) would then come close to allowing similar credit growth in 2004–05 than what is expected over 2001–03. In this combined scenario, other variables such as reserve and broad money and the interest rates also show a reasonable pattern.

Figure IV.2. Mauritania: Alternative Simulations of Credit to the Private Sector and Private Deposits (End of period data)



³⁸Fully eliminating reserve requirements would have a larger impact but may be undesirable in Mauritania from a prudential standpoint.

³⁹Financial intermediation remains underdeveloped in Mauritania, as evidenced by the high value of velocity (about 6.5).

⁴⁰Within the adopted framework, such an increase can be interpreted as a fall in the currency/deposits ratio, reflecting an increased willingness of depositors to place money at banks and thereby rely less on cash for their transactions or for saving purposes. Hence, to simulate the effects of further mobilization of private deposits, this ratio (parameter a_1) is assumed to fall gradually from 21 percent in 2002–03 to 15 percent at-end 2005.

17. **However, other policy actions aimed at providing liquidity to banks in a more direct fashion will likely be needed.** Lowering reserve requirements and relying on further private deposits mobilization fall short of addressing two issues. First, under the above simulations, most of the public deposits previously accumulated at banks remain in place at end-2005. As they are likely to be reduced beyond that point, other problems will emerge, with less scope for expanding private deposits or reducing reserve requirements. Second, the reduction of public deposits over the medium run may be faster than is embedded in current projections, because of either (i) increased implementation capacity and public spending; (ii) adverse exogenous shocks reducing fiscal revenues or lower external financing; and (iii) positive steps taken by the government to transfer the deposits from commercial banks to the central bank. Addressing these various issues would likely require supplying banks with additional liquidity in the medium term. As investigated in the next chapter, one instrument that could be used for that purpose is credit auction by the central bank to commercial banks.

D. Conclusion

18. The model put forward in this chapter provides a framework for monetary policy discussions. The BCM should continue to rely on its indirect instruments to manage liquidity conditions, although further work is needed to assess the channels of monetary transmission and thereby improve the conduct of monetary policy. In addition, it appears that the expected reduction in public deposits accumulated at commercial banks is likely to drag down credit to the private sector in the medium run and could therefore threaten the growth strategy. Current monetary instruments such as a reduction in the reserve requirement ratio and efforts by banks to mobilize private deposits would help mitigate the effects of the liquidity squeeze. However, these efforts will probably need to be supplemented by new instruments, such as credit auctions, aimed at increasing liquidity to banks.

A SIMPLIFIED MONETARY FRAMEWORK

19. The framework gives a simplified view of the banking system. It focuses on a restricted number of variables of interest for Mauritania’s monetary policy. Thus, the balance sheets of the central bank and the commercial banks are decomposed as follows.

Central Bank

Net Foreign Assets (NFA)	Currency in circulation (C)
Claims on Commercial Banks (CCB)	Bank Reserves (BR)
Others Net, Central Bank (ONCB)	Government Deposits, Central Bank (GDCB)

Deposit Money Banks

Bank Reserves (BR)	Private Deposits (PD)
Credit to the Government (CG)	Government Deposits, Banks (GDB)
Credit to the Private Sector (CPS)	Claims from Central Bank (CCB)
Others Net, Banks (ONB)	

20. As the focus is on the monetary process, some of these variables are simply taken as exogenous inputs (e.g., net foreign assets), others as policy decisions (e.g., government deposits at banks), and the remaining are determined as endogenous outcomes (e.g., bank reserves).

More precisely, the variables assumed to be under the control of the authorities include:

- The claims of the central bank on commercial banks (CCB);
- The three variables pertaining to the government’s relationships with the banking system—namely government deposits at the central bank (GDCB) and at banks

(GDB), and credit from the commercial banks to the government (CG). The latter variable includes treasury bills, the main monetary intervention instrument.⁴¹

Other exogenous variables include net foreign assets (NFA, determined by the balance of payments) other items net (ONCB, ONB), and nominal GDP (GDPV), which feeds into money demand.

The major endogenous outcomes are reserve money ($RM = BR + C$), broad money ($M = C + PD$), credit to the private sector (CPS), and an interest rate representative of money market conditions (i).

21. The following assumptions are made on the behaviors of banks and the nonbank public:

- The currency-deposits ratio (C/PD), reflecting decisions from the public on the amount of currency held relative to deposits, is simply assumed constant. Thus : $C = a_1 * PD$, where a_1 is a parameter.
- Bank reserves are split into required reserves (RR) and excess reserves (ER). Required reserves are determined as: $RR = a_2 * (PD + GDB)$, with a_2 the coefficient of required reserves on private deposits and government deposits. In turn, the demand for excess reserves depends on the commercial banks' expected liquidity needs and the opportunity cost of reserves. To capture these features, the following functional form is adopted: $ER/PD = a_3 - a_4 * i$.
- Money demand is presumed to grow in line with nominal GDP and to be interest rate sensitive:⁴² $M = a_5 * GDPV / (a_6 + i)$.

The various parameters appearing in these equations are calibrated on the basis of past averages (e.g., for the currency/deposits ratio) or institutional constraints (for the coefficients of required reserves). This yields $a_1=0.21$, $a_2=0.045$, $a_3=0.05$, $a_4=0.5$, $a_5=4.0$, and $a_6=20$.

22. Under these assumptions, it is straightforward to show that reserve money is determined as:

$$RM = NFA + CCB - GDCB + ONCB.$$

⁴¹Albeit all considered exogenous, these three variables should be jointly consistent with the domestic financing need of the government. A fourth potential variable—credit from the central bank to the government—is not explicitly introduced (and is therefore subsumed under other items net), since this variable is *de facto* maintained constant by the Mauritanian authorities and plays no role in the monetary process.

⁴²Given the lack of competitive behavior within the banking system, this effect is assumed to be relatively low. Specifically, a decline of 1 percentage point in the interest rate generates an increase of about 3 percent in money demand, all else equal.

As usual, the supply of reserve money is affected by a combination of net foreign assets, net claims of the central bank on government, net claims on commercial banks, and other items net.

23. Using accounting identities and basic algebra, other endogenous outcomes may also be expressed as a function of exogenous variables and parameters. To illustrate, calculations show that the interest rate, for instance, is given by:

$$i = [a_1 + a_2 + a_3 - a_6.(1 + a_1).A] / [a_4 + (1 + a_1).A]$$

where A is defined by : $A = (RM - a_2 * GDB) / (a_5 * GDPV)$

The interest rate is positively related to factors raising money demand, such as increases in the coefficient of required reserves (a_2), and upward shifts either in the demand for excess reserves (increase in a_3 or fall in a_4) or in broad money demand (increase in a_5 or fall in a_6). Conversely, the interest rate is negatively related to factors raising the money supply, such as a fall in the currency/deposit ratio (a_1) and an increase in reserve money.

24. On the whole, the model reflects the view that the authorities may exert control over monetary aggregates and the interest rate by varying reserve money. The central bank has good control over reserve money through the issuance of T-bills.⁴³ Money, credit, and the interest rate are then jointly determined at the money market equilibrium, the characteristics of which depend on the behaviors of banks and the public, as described in the above assumptions.

⁴³The issuance of T-bills affects net claims of the central bank on government (GDCB) in the above equation determining reserve money. The BCM may then control the supply of reserve money, provided, however, that it correctly forecasts other autonomous factors, such as NFA.

V. TRANSFERRING GOVERNMENT DEPOSITS FROM THE BANKING SYSTEM: MONETARY MANAGEMENT IMPLICATIONS⁴⁴

1. This chapter examines the issue of government deposit accumulation in the banking system in Mauritania. Section A examines the evolution of these deposits, and Section B discusses their monetary management implications. A mechanism to allocate credit to commercial banks, partially replacing the withdrawal of these deposits once they are transferred back to the central bank, is discussed in Section C, reviewing the experience of transitional countries with credit auctions. Section D draws out policy recommendations for Mauritania, and Section E concludes.⁴⁵

A. Evolution of Government Deposits in the Banking System

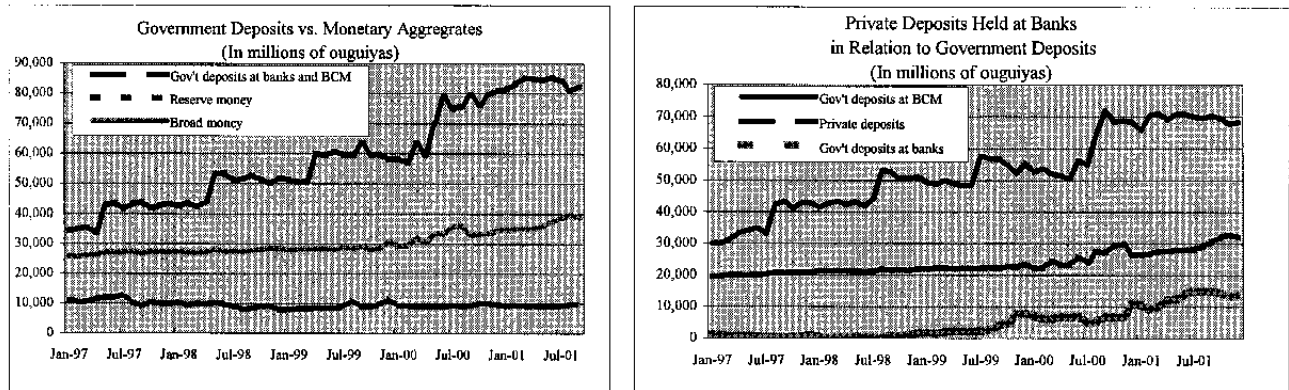
2. Since the second half of 1996, government deposits held in the banking system have been increasing at a relatively rapid pace compared to main monetary aggregates, including private sector deposits. This increase coincided with the signing of the five-year fisheries agreement with the EU in 1996, which has been renewed for another five-year period from 2001. In addition, since 1996, the government has been pursuing a cautious fiscal policy with external budget financing exceeding financing requirements, thus adding to the accumulation of government deposits in the banking system. Initially, these deposits were placed at the central bank (BCM), but since mid-1998, a large proportion has been shifting to commercial banks (Figure 1).⁴⁶

⁴⁴Prepared by Samya Beidas.

⁴⁵This draws upon a number of MAE papers: OP/00/7, PPAA/94/11, OP/95/2, OP/99/2, and WP/01/149.

⁴⁶By end-2001, private deposits in the banking system amounted to UM 32 billion, while government deposits amounted to UM 14 billion (of which UM 2.5 billion are project funds, i.e., not treasury holdings). The respective stock growth since year-end 1999 to 2001 was 35 and 77 percent. At year-end 2001, 17 percent of total government deposits were placed in commercial banks, equivalent to 5.5 percent of GDP, and 17 percent of the aggregated balance sheet of the banking system.

Figure V.1. Mauritania: Evolution of Government Deposits vs. Monetary Aggregates, 1997–2001



3. While in principle the placement of government deposits in commercial banks should not be a major problem, it is an issue in Mauritania due to several factors. First, in view of the vulnerability of the Mauritanian economy stemming mainly from its heavy concentration and its narrow export and production base, an exogenous external shock could trigger a sudden withdrawal of these deposits by the government, leading to a private credit crunch and financial difficulties for commercial banks. Second, the distribution of these deposits among banks in recent years has not followed any evident criteria or rule, with some evidence suggesting that these ostensibly support weaker banks. Third, while commercial banks are not in any immediate danger, the safety of these deposits is nonetheless not totally assured. Fourth, the existence of these deposits could complicate the already weak conduct of monetary policy (see below). Fifth, these deposits tend to discourage banks from seeking more ambitious private deposits growth targets, particularly when government deposits were unremunerated, construing these as a subsidy to banks.

4. Surveys of central bank practices in 65 industrial and developing countries have shown that in most cases the law requires the central bank to hold government deposits, while at the same time, it provides some degree of flexibility to holding a proportion of these deposits with commercial banks. In practice, governments' financial operations and management show that such a flexibility is widely used and reflects several factors, including efforts to (i) increase returns on government balances, since in most cases government deposits are remunerated by commercial banks only; and (ii) remove burdensome retail services from the central bank. However, in all cases the task of ensuring sufficient liquidity in the system and neutralizing any unwanted effects are left entirely to the central bank.

5. In Mauritania, the pursuit of a prudent fiscal policy, together with limited capacity and depth of the banking sector (and a large informal sector), induced commercial banks to increasingly rely on government deposits to supplement private sector deposits to maintain adequate growth in credit to the private sector. For this reason and those above, it has been the view of the staff that moving the bulk of these deposits back to the BCM over the

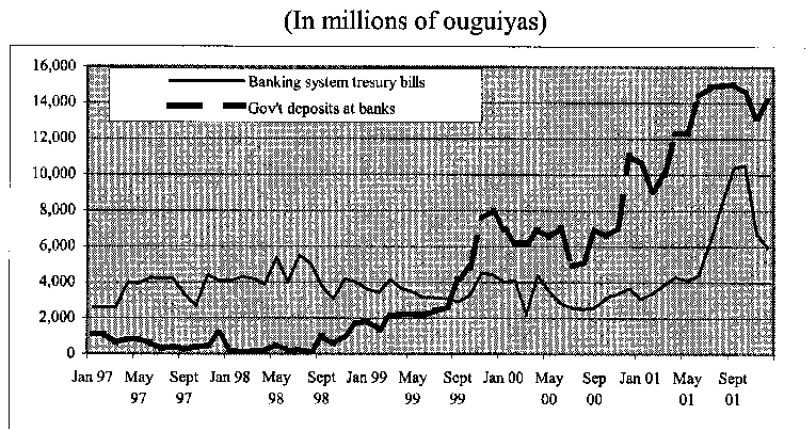
medium term should proceed gradually and cautiously to avoid a private sector credit crunch that would hamper economic growth. To this end, several monetary instruments could be considered to facilitate the transfer and its harmful consequences, including the use of a new market-based credit auction.

B. Impact of Transferring Government Deposits on Monetary Management

6. The previous chapter shows that as the government begins to run budget deficits and draws down its holdings of government deposits at banks in 2004, credit to the private sector contracts by 3 percent. With this in mind the BCM, with the assistance of the resident MAE resident banking supervision adviser, is in the process of preparing a report to discern the composition of government deposits at commercial banks (by origin, size, and trend volatility), the level of transfer, and the impact of this on the financial viability of each bank. On the basis of this study, the BCM will agree to transfer schedules with each bank using objective and transparent criteria to level the playing field among all banks, eliminating any favoritism.

7. As a prelude to transferring these deposits and to encourage banks to begin to adjust to a more competitive environment, government deposits began to be remunerated initially at 3 percent from January 2002, which could be gradually raised to a market rate.⁴⁷

Figure V.2. Mauritania: Treasury Bill Purchases and Government Deposit Holdings at Commercial Banks



8. The central bank's liquidity management appears to be stable, with excess liquidity in the banking system⁴⁸ on average at 20 percent since the beginning of 1997. There were two

⁴⁷Remuneration would generate income for the budget and eliminate windfalls (in effect subsidies) to banks, especially at times of high interest rates. While most countries remunerate these deposits, they do differ in their approach to remuneration. Some do not remunerate at market rates, particularly when they are developing countries, or when their main objective is to reduce the government's impact on banking reserves.

exceptions to this where the excess reached 25 to 30 percent in both mid-1998 and July to October 2001. The excess during the latter period induced a sharp increase in treasury bill purchases by banks and a sharp decrease in treasury bill rates (Figure 2).⁴⁹ In hindsight, this excess liquidity could have been managed more forcefully, including through the use of existing indirect monetary instruments: the repurchase and reverse repurchase agreements as well as the interbank market, especially since both the discount and interbank rates have been brought down in 2001, with a widening gap between the two.^{50, 51} However, it is expected that the transfer of government deposits will add some complexity to BCM's liquidity management, including its capacity to accurately estimate bank reserves.⁵² Looking ahead, the BCM will need to continue to absorb or inject liquidity through the fortnightly treasury bill auctions to foster market development and build up collateral instruments, as well as through strengthening and institutionalizing the usage of repos and reverse-repos for the period intervening each treasury bill auction.⁵³

9. In addition to the current indirect monetary instruments, a number of auxiliary measures could also contribute to preventing a liquidity squeeze: (i) mobilizing further private deposits; and (ii) reducing the required reserve ratio. Both of these measures were simulated in the previous chapter to estimate their impact on broad money and credit. The

⁴⁸A measure of excess liquidity recommended in operational literature is the ratio of the banking sector's excess reserves plus treasury bills divided over the money base. This trend in Mauritania consistently shows an average of approximately 20 percent. The ratio of excess reserves excluding treasury bill holdings to private deposits also appears fairly stable, although not particularly interest-elastic. For example, following the discount rate fall of 2 percent in October 2001, this ratio fell from 4.18 percent in the third quarter to 4.10 percent in the fourth.

⁴⁹Since the last quarter of 2000, the relationship between government deposits held by the banking system and their treasury bill purchases is highly correlated with a lag of one period, as shown in the figure below. The stock of treasury bills held by banks was 42 percent of the stock of government deposits in the system at end-2001 (rising to 60 percent at end-February 2002). The remaining deposits are extended as credit to the private sector, which has been rising sharply since the beginning of 2000.

⁵⁰See the previous chapter for a more detailed update of money market instruments in Mauritania.

⁵¹Unfortunately, repos and reverse-repos were hardly used in 2001, while there was not a single interbank operation during the same year. A senior BCM official suggested that hands-on assistance in using these instruments was warranted to manage these peaks in liquidity.

⁵²This capacity is limited since the daily paths of each bank's reserve position throughout the 2-week reserve averaging period intervening each treasury bill auction is not in place. See May 2002 Staff Report (Box 4) for a description of liquidity forecasting in Mauritania and staff recommendations to improve the process (regardless of the transfer of government deposits). Taking an *ad hoc* sample of BCM's liquidity forecasting worksheets suggests that a target of zero excess reserves is used fortnightly. It should be noted that this is a narrower definition of excess liquidity to the one used above.

⁵³The fortnightly treasury bill auction offers 2- and 6- or 8-week maturities at each session.

results show that (i) a 20 percent increase in private deposits⁵⁴ is estimated to yield an expansion of 13.5 and 7 percent in broad money and credit, respectively; and (ii) a reduction in the reserve requirement ratio from 4.5 percent to 2 percent⁵⁵ is estimated to yield an expansion in broad money and credit of 8.8 and 5 percent, respectively. As is apparent, these measures will not suffice to fulfill the credit growth envisaged in the medium-term framework, and it is thus expected that the BCM will need to develop a new market-based instrument to provide sufficient liquidity to commercial banks. One such instrument is auctioning government deposits to commercial banks as discussed in the following section.

C. Allocating Government Deposits Among Banks Through a Credit Auction

10. The shortfall in liquidity highlighted above could be provided by allocating (the transferred) government deposits through a BCM-managed credit auction to the banking system, thus encouraging a more active approach to liquidity management, leveling the playing field among banks and institutionalizing the deposit allocation process.^{56, 57} A credit auction allocation ensures that resources accrue to those who value them most and where they are most productive. However, this can only be true when there are no restrictions placed on the use of the credit auction and its interest rate. In this case, competitive pressure on banks will increase, and corporate governance will potentially improve, as banks will be forced to develop their credit analysis capabilities. A prerequisite is simply a large stock of central bank credit provided to banks through the auction. The central bank can control the level of credit auctioned, thus influencing the level of bank reserves and the rate of interest in both the credit auction and the interbank market.

11. Credit auctions are becoming more of a mainstream monetary instrument as reserve requirements fall, and central banks view the money stock as demand-determined and a function of income or wealth and interest rates. The falling reserve requirements reflect a receding prudential justification, since if solvent banks have access to central bank credit auctions they do not need reserves to protect themselves from runs, and if one is concerned

⁵⁴The year-on-year growth in private deposits for 2001 was 20 percent, while credit to the private sector growth was 30 percent. The monetary program projects a 38 percent year-on-year growth in credit for 2002.

⁵⁵BCM started applying the same reserve requirement on government deposits in October 2001.

⁵⁶Money markets in Germany, France, and Belgium can be described as credit auctions. The central bank of Malaysia auctions government deposits, and that of Norway auctions central bank deposits.

⁵⁷An alternative to introducing a distinct instrument for day-to-day liquidity management might be to adjust the current design of repos to allow for much longer maturities to fund this structural need—as the current 1–7 days maturity would not suffice. However, this might be operationally difficult to implement as repos are fully collateralized, and replacing the full stock of deposits with repos will probably encounter collateral deficiencies as the stock of treasury bills was only UM 5 billion at end-2001. If adopted in, say, the medium term, when there is a sufficient treasury bill stock, this would have the added effect of encouraging open market operations (through the secondary market).

about their profitability or solvency, forcing them to keep part of their assets in a nonincome-generating form is counterproductive.

12. The auction can be an important component of the package of measures needed to liberalize and manage the interest rate and improve monetary control, as the price discovery process inherent in an auction provides a market-based reference rate that can be used both inside and outside of the central bank. One could argue that this should already exist in Mauritania through the current fortnightly treasury bill auction. However, since the treasury bill market is still primary and rudimentary, with treasury bill purchases by banks governed essentially by liquidity considerations (reflected in holdings of government deposits), the price discovery process is far from obvious. The credit auction would be different in the sense that it would offer a means of pricing central bank credit, by leaving the volume of credit to be auctioned unknown *ex ante*, and thus offering a price signaling mechanism to the underdeveloped (treasury bill and interbank) markets.

13. These auctions are recommended in operational literature when the use of indirect instruments is still experimental, the interbank market is fairly inactive, and banking supervision is nascent, as is the case in Mauritania.⁵⁸ Experience in other financial markets demonstrates that the structural need for central bank credit will usually decline with (i) the level of development of the banking system; (ii) the efficiency of the payment system; (iii) the increased mobilization of private deposits by commercial banks; (iv) the development of the interbank and money markets; and (v) the development of securities markets to provide enterprise financing from outside of the banking system. But when the interbank and money markets are embryonic, banks still need to depend on the central bank to exercise a redistributive role in carrying out operations to sterilize government cash flows, including the use of auctions. Once the secondary market develops, the central bank can do away with the credit auction, and the interbank market can take over this credit allocation role.⁵⁹

14. Evidence from transitional countries shows that the auction design process could be tailored to mitigate deficiencies in information and incentives and shallowness of markets, thus bringing the benefits of the auction without the usage of fully collateralized credit auctions, which may involve increasing central bank credit risk. This and other deficiencies (e.g., collusion among auction participants, weak banking supervision, and inelastic demand for central bank credit), all of which become more of a problem when the credit is

⁵⁸Mauritanian banks, as is the case in many developing countries, are reluctant to forego their private deposits and lend to other commercial banks; thus credit auctions are a suitable alternative. Because the interbank market does not function efficiently, and banks are reluctant to lend to each other, a credit auction will force the BCM to get involved in the deposit redistribution process for the first time since bank-specific credit ceilings were abolished in 1996.

⁵⁹For example, central banks in Armenia and Kazakhstan neutralized government flows as part of monetary operations. Initially, this took place through credit and deposit auctions for both structural and monetary purposes, but later on open market operations were used in the secondary market for government bills.

uncollateralized, could be mitigated through the design process. The disadvantage of an uncollateralized credit auction is that the central bank is exposed to credit risks that are difficult to assess due to adverse selection of large banks offering the highest bids but also bearing the highest risks. However, initially transparent and uniform access rules, as well as compliance with mandatory prudential ratios, will mitigate these risks (see Appendix III).

15. Uncollateralized credit auctions appear to have successfully paved the way for the development of the interbank markets and more refined open market operations and do not appear to have resulted in excessive credit risk or monetary expansion. In many transitional countries, interest rates on loans and deposits have tended to track the auction rate. The key issue is that an auction could contribute to the development of the interbank market through the imposition of transparent credit auction rules by the central bank which forces banks that have historically depended on government deposits for liquidity to look for other sources (including the interbank market).

16. With interbank development, credit auction participation will diminish, and collusion practices could increase, with unwanted bidding up of the interest rate, and thus obviating the need for the auction or signaling a review of its purpose and structure. Certain aspects of the auction can diminish the development of the banking system as the auction fulfills a structural function in redirecting credit toward banks that are unable to compete in the interbank market. But as markets develop, the auction would move to short-term monetary control and, with increased collateralization, toward interbank finance. With time, the frequency of the auctioned credit could be increased and the maturity reduced. In all cases, the central bank should not allow auctions to become a permanent substitute for an interbank market or to become the refuge of uncreditworthy banks after the other banks have moved on to the interbank or deposit-based sources of funds—and one way to avoid this is to increase the rate of collateralization.

D. Policy Recommendations

17. Transferring government deposits to the central bank has many consequences, the most important of which is a possible private sector credit crunch. To mitigate the impact of this transfer, the central bank can reduce the required reserve ratio, and greater efforts could be made by commercial banks to mobilize private sector deposits. However, simulations of the impact of these measures suggest that they will be insufficient to compensate for commercial banks' loss of liquidity. Consequently, a credit auction of government deposits could be considered as an additional instrument to address the possible shortage of liquidity. Credit auctions' design would need to be tailored to overcome Mauritania's shallow monetary markets.

18. Although the central bank lacks the expertise and human resources necessary to put in place a credit auction, this could be possible with technical assistance. On the basis of the above presentation and the characteristics of credit auctions as described in Appendix II, this auction could have the following features:

- a. **Purpose:** To reallocate some of the credit to commercial banks as a result of transferring government deposits to the central bank and reduce the impact of this transfer on banks' liquidity and credit to the private sector. Another advantage of the auction is to provide a much needed pricing signal to commercial banks.
- b. **Frequency:** Given the large size of government deposits and the short-term nature of private sector credit, a high frequency auction (perhaps once a week) could be considered.
- c. **Volume:** Depending on the sequencing of supporting liquidity expansion policies (the reduction in the required reserve ratio and the expansion in the private deposit base), the volume of credit auctioned would need to supplement these to meet the broad money and credit growth projections set out in the medium-term framework. This volume consideration must be balanced with the price signaling objectives of the auction.
- d. **Price:** The price is expected to range between the discount window as an upper limit and the interbank rate as a lower limit.
- e. **Collateralization:** In view of the insufficient collateral in Mauritania, partial collateralization (with treasury bills) could be considered at the beginning while at the same time developing new collateral instruments—such as promissory notes, fixed assets, and foreign currency deposits.
- f. **Maturity:** Although credit is mainly extended on a short term basis, much of this is rolled over at the end of the maturing; hence, Mauritania may need to extend credit with a maturity beyond 8–12 weeks.
- g. **Access rules:** Should be devised to enhance prudential banking procedures and transparency. For each participant, these could include: clean repayment schedules, observance of reserves requirements, and observance of prudential ratios (with emphasis on credit concentration ratios).
- h. **Limits on access:** these could be devised to maintain a credit limit for each bank and applied by the central bank (perhaps an auction committee) on the basis of each bank's balance sheet (e.g., a function of total deposits or capital). The central bank could monitor the application without exceptions to ensure a market-based allocation.

E. Conclusion

19. This chapter reviewed the evolution of government deposits in commercial banks in Mauritania since 1996 and explored concerns surrounding the placement of these at commercial banks given the high degree of vulnerability of the economy, making their sudden withdrawal a threat to banking viability and private sector activity. As the transfer is likely to cause a private sector credit crunch, even with the employment of all current

monetary instruments—including reducing the required reserve ratio and increasing the private sector deposit growth rate—this chapter discussed the possibility of introducing a central bank credit auction. While the introduction may pose some technical difficulties at first, this chapter argued that the shallowness of money markets could be overcome through the design of the auction and made some preliminary recommendations for the auction features in Mauritania.

SUMMARY OF CREDIT AUCTION PROCEDURES USED IN TRANSITIONAL ECONOMIES

Purpose, Frequency, Volume, Price, and Maturity

- The **purpose** of these auctions was to (i) replace the refinancing of direct credits at predetermined rates; (ii) inject short-term liquidity in parallel with central bank brokering of interbank deposits; (iii) replace credit allocated based on banks' capital with uncollateralized credit to provide short-term refinancing; and (iv) restrict banks' access to funds provided passively by the central bank and to replace these with facilities under the control of the central bank through fully collateralized credit in the form of repurchase and reverse-repurchase agreements for monetary control.
- **Frequency** ranged between twice a year to twice a week.
- The **credit volume** auctioned varied between being within the range of the announced volume (for price-influencing objectives) or at a predetermined volume (satiating liquidity shortage objective). Amounts auctioned were determined as a proportion of broad money (7–17 percent) as part of a reserve money program. Banks bid on a pool of **maturities** ranging between 1–30 days to 12 weeks. This was mainly central bank credit, but there were some cases where commercial banks holding surplus funds contributed to the pool of auctioned credit—instead of lending through the interbank market and owing to a lack of secure lending opportunities.
- Specific information on bids received was mainly kept confidential, or banks submitted sealed bids—but the **price** in some cases was modified during the auction to reflect price-signaling concerns. Multiple bidding was permitted. In one or two countries, the auction followed a dynamic adjusted supply of credit using and 'open outcry' method through the interbank market. Credit was then allocated to participants who bid above the cutoff rate, or deposits were allocated at the average rate bid, but banks might be allowed to enter up to three bids in a credit auction. The interest could be gradually increased until one is left with one bidder. This bidding could be conducted at the stock exchange (if one existed) or at the central bank. Usually, uncollateralized auctions were for an announced volume with a minimum interest rate, so as to be above the interbank market rate, and credit awarded at the price bid. The average interest rate was released after the auction. Central banks set a floor interest rate or a cut-off rate at which volume offered and volume bid came closest to matching.
- In most countries **auctions became irrelevant after a five-year period** and the authorities resorted to other instruments, e.g., Lombard (overdraft) loans, or open market operations through treasury bill repurchase agreements (as bidders waned) used to manage short-term bank liquidity (arranged bilaterally with banks). Lombard

and discount rates were set to the auction rate. Auctioning of refinancing credit became a primary indirect instrument of monetary policy in one case.

Rules of Access

- **Banks must have repaid outstanding debt** from a previous auction and be current on all auction-related obligations.
- **Banks must meet reserve requirements** (and can use up to 90 percent of these as collateral), prudential norms, bookkeeping, a minimum of a one-year registration with the central bank, etc.
- **Collateralization** (of credit auctions or interbank lending) varied from zero to 100 percent and was required with (quasi-) assets (e.g., treasury bills, promissory notes, fixed assets, hard currency deposits, or balances on correspondence accounts). Full collateralization of all Lombard loans and repurchase agreements was required with treasury bills.
- Almost all banks and certain nonbank financial intermediaries were **eligible to bid**, although some large banks were excluded. In some cases, purchase transactions with the central bank were open only to primary dealers, which had current accounts open at the central bank and dealt in the money market. Banks offering deposits for resale could specify banks they did not wish to accept bids from.

Limits on Access

- The central bank **maintained a credit target for each bank** (applied flexibly depending on liquidity needs). An auction committee (or the central bank) set limits on access, such that each bank's specific access could be limited by a ratio set as a percentage of their total deposits or capital—the latter was preferred as it encourages prudential behavior so as not to attract high-risk borrowers. This was based on a combination of the following: (i) reserve requirements; (ii) a minimum of one to three times the paid-in capital to a maximum of overall credit of no more than five times this; (iii) 20 percent of its credit to nonbanks, or liabilities may not exceed 20 times a bank's capital; and (iv) initially limit how much each bank could bid for or that a single bid could not take up more than 20–50 percent of total credit auctioned.
- The central bank reserved **the right to exclude participation** or offers. In practice, the high minimum interest rate has limited participation to the liquidity-starved larger banks. Banks offering deposits for resale may specify limits on amounts they will sell to specific banks. Central banks could introduce a ceiling on the Lombard (overdraft) facility. Credit obtained through a single auction could be rolled over three times before it was repaid.