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Republic of Madagascar: Selected Issues and Statistical Appendix

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REPUBLIC OF MADAGASCAR

Selected Issues and Statistical Appendix

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Approved by African Department

May 18, 2005

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Madagascar: Basic Data

Area, population, and GDP per capita

Area: 582,000 square kilometers
Population
Total: 16.0 million (2004)
Growth rate: 5.3 percent (2004)
GDP per capita (*World Bank Atlas* method): US$251 (2004)

	1999	2000	2001	2002	2003	2004
National acounts			(In billions of Ariary)			
GDP at current prices	4,676	5,248	5,969	6,008	6,779	8,156
GDP at constant 1984 prices	445	466	494	432	474	499
			(Annual percentage change at 1984 prices)			
GDP at market prices	4.7	4.7	6.0	-12.7	9.8	5.3
Primary sector (at factor cost)	3.5	1.0	4.0	-1.3	1.3	3.1
Secondary sector (at factor cost)	4.3	7.1	7.5	-20.7	14.5	6.6
Tertiary sector (at factor cost)	5.5	5.0	6.2	-15.0	10.6	6.0
			(In percent of GDP)			
Consumption	93.1	92.3	84.7	92.3	98.2	88.9
Gross domestic investment	14.9	15.0	18.5	14.3	3.6	27.5
Gross domestic savings	6.9	7.7	15.3	7.7	1.8	11.1
Current account balance [1]	-5.4	-5.6	-1.3	-6.0	-6.0	-8.0
Price movements			(Annual percentage change)			
GDP deflator	9.8	7.1	7.3	15.3	2.8	14.3
Consumer price index (traditional basket) [2]	14.4	9.9	4.8	13.4	-0.8	27.0
Government finance			(In billions of Ariary)			
Current revenue and grants	702.0	802.9	838.1	610.6	1,045.0	1,653.4
Current expenditure	435.0	503.6	616.3	621.9	771.7	1,027.3
Capital expenditure	323.2	367.8	436.2	289.2	531.5	1,018.0
Overall balance on a cash basis (deficit -)	-116.6	-177.6	-264.4	-372.6	-324.4	-463.8
Net domestic financing	49.3	76.8	116.2	144.5	119.3	-84.6
Of which : domestic banks (net)	33.4	0.5	93.7	144.4	8.8	-215.6
			(In percent of GDP)			
Overall deficit, commitment basis, excluding total grants	-6.4	-6.8	-8.2	-7.7	-9.3	-13.1
Overall balance on a cash basis, including grants (deficit -)	-2.8	-3.1	-4.3	-5.5	-4.2	-4.9
Money and credit			(In billions of Ariary)			
Foreign assets (net)	342.3	401.3	514.2	475.6	545.0	953.3
Domestic credit						
Claims on the government (net)	312.1	312.7	409.6	541.4	615.7	403.8
Claims on the economy	391.1	483.0	555.7	560.3	604.1	834.6
Broad money	996.9	1,183.4	1,471.5	1,575.6	1,704.6	2,096.1

Madagascar: Basic Data (continued)

	1999	2000	2001	2002	2003	2004
	(Annual percent change)					
Domestic credit						
Claims on the government (net)	17.7	0.2	31.0	32.2	13.7	-34.4
Claims on the economy	7.0	23.5	15.0	0.8	7.8	38.2
Broad money	19.5	18.7	24.4	7.1	8.2	23.0
Balance of payments	(In millions of SDRs, unless otherwise indicated)					
Exports, f.o.b.	425.9	628.6	757.9	375.0	672.8	646.4
Imports, f.o.b	-548.2	-707.6	-746.3	-411.4	-808.7	-949.6
Trade balance	-122.3	-79.0	11.6	-36.4	-135.9	-303.2
Services (net)	-94.8	-131.1	-126.8	-134.4	-215.3	-177.3
Of which : interest payments due	-39.5	-44.3	-41.4	-44.7	-40.7	-42.2
Unrequited transfers (net)	93.9	102.6	114.7	74.2	216.4	222.7
Private transfers (net)	68.8	77.1	89.7	68.0	114.4	109.9
Public transfers (net) [3]	25.1	25.5	25.0	6.2	102.0	112.8
Current account balance						
In percent of GDP [4]	-5.7	-5.5	-1.7	-4.4	-4.9	-10.6
Capital transfers	135.9	119.7	179.5	70.2	165.3	287.3
Of which : drawings	71.3	85.6	87.2	120.3	121.0	203.9
amortization	-77.1	-71.7	-68.7	-72.1	-73.4	-68.2
direct investment	42.7	52.9	73.1	6.4	9.1	30.0
Overall balance	-9.9	-93.9	19.5	-99.5	-26.4	-24.2
Debt relief and cancellation	40.8	59.6	55.8	57.9	47.8	43.7
IMF (net)	9.7	34.2	21.4	8.7	5.8	29.5
Arrears (reduction -)	3.1	5.8	1.6	1.5	-9.5	0.0
Reserves (net) (increase -)	-43.7	-5.7	-98.3	31.4	-17.8	-49.1
Gross official reserves [5]	9.8	10.2	14.3	19.2	11.9	11.7
Outstanding external debt [6]	2,948.6	3123.9	3132.4	...	...	...
Exchange rates (period averages)						
Ariary per SDR	1,717.2	1,790.2	1,678.2	1,754.9	1,734.8	2,772.1
Ariary per U.S. dollar	1,256.2	1,357.4	1,318.3	1,318.5	1,240.6	1,870.8

Sources: Malagasy authorities.

[1] Including official tranfers.

[2] End of period.

[3] Including project grants.

[4] Including official transfers.

[5] In weeks of imports of goods and services.

[6] After debt relief.

Madagascar: Social and Demographic Indicators, 2004 [1]
(Unless otherwise indicated)

Land area (square kilometers)	581,540
Population	
Total (in millions)	16.0
Urban population (percent of total)	30.7
Population density (people per sq. km.)	28.3
Population density, rural (people per sq. km. of arable land) (2001)	378.5
Population growth (annual percentage)	2.8
Life expectancy at birth (years)	
Overall	55.5
Women	57.0
Men	54.0
Crude birth rate (per 1,000)	38.6
Crude death rate (per 1,000)	11.9
Infant mortality rate (per 1,000) (2001)	84.0
Education	
Illiteracy rate, adult total (percentage of people over 15) (2001)	33.0
Primary education, pupils (in thousands) (1998)	1,889.9
Secondary education, general pupils (in thousands) (1997)	356.6
Secondary education, vocational pupils (in thousands) (1992)	8.1
Primary school enrollment (percentage of relevant age group) (2001)	68.6
Secondary school enrollment (percentage of relevant age group) (1998)	11.5
Tertiary school enrollment (percentage of relevant age group) (1995)	2.2
Health	
Hospital beds (per 1,000)	0.5
Physicians (per 1,000)	0.1
Safe water (percentage of population with access) (2000)	47.0
Sanitation (percentage of rural population with access)	25.0
Child immunization (12-23 months, percent)	
DPT	62.0
Measles	61.0

Sources: CD-ROM of World Bank, *World Development Indicators* , 2004.

I. INTRODUCTION

1. **Madagascar has, since the late 1990s, made major strides in macroeconomic stabilization and structural reforms, however, the economy remains vulnerable to shocks and policy slippages**. During the period 1999-2003, economic growth picked up sharply and inflation remained in single digits, excluding 2002 when there was a political crisis. However, inflation increased to 27 percent in 2004 (on a year-on-year basis), following a sharp depreciation of the exchange rate during the first half of the year, fueled by exogenous shocks and inconsistent macroeconomic policies. This paper presents three studies, which are motivated by the need to maintain macroeconomic stability and improve resilience to shocks.

2. **Chapter I analyzes the relationship among prices, income, and money in Madagascar over the period 1982-2004**. It finds that a stable long-run relationship for the price level exists, but that the adjustment toward this long-run equilibrium is quite slow. It also found nominal money growth and the exchange rate to be significant determinants of inflation, along with inflation inertia, which implies that inflation expectations were determined by past events during the period under study. These results suggest that, to change inflationary expectations, a strong and comprehensive package of tight financial policies is needed, complemented by a boost in monetary policy credibility.

3. **Chapter II presents an assessment of the real effective exchange rate**. It finds that the current level of the real effective exchange rate is below its long-term equilibrium. Several factors explain this discrepancy, including monetary policy, tax exemption, and terms of trade shock, while other factors tend to mitigate the extent of the discrepancy. The chapter concludes that the current level of the real effective exchange rate is broadly appropriate.

4. **Chapter III presents some qualitative competitiveness indicators and examines the performance of exports in Madagascar at an aggregate and product level**. It finds that exports have performed fairly well and that performance in the manufacturing sector has been particularly strong. Textiles and garments were found to be the important contributing factors, in part driven by external trade policies such as preferential trade agreements, including the African Growth and Opportunity Act (AGOA) with the United States. As a result, the expected termination of the third provision of AGOA in 2007 poses some challenges. However, given that Madagascar's export base is diversified, the chapter concludes that the effect of such shocks can be mitigated with appropriate policies, in particular policies aimed at safeguarding recent gains in exchange rate competitiveness.

II. Determinants of Inflation in Madagascar[1]

A. Introduction

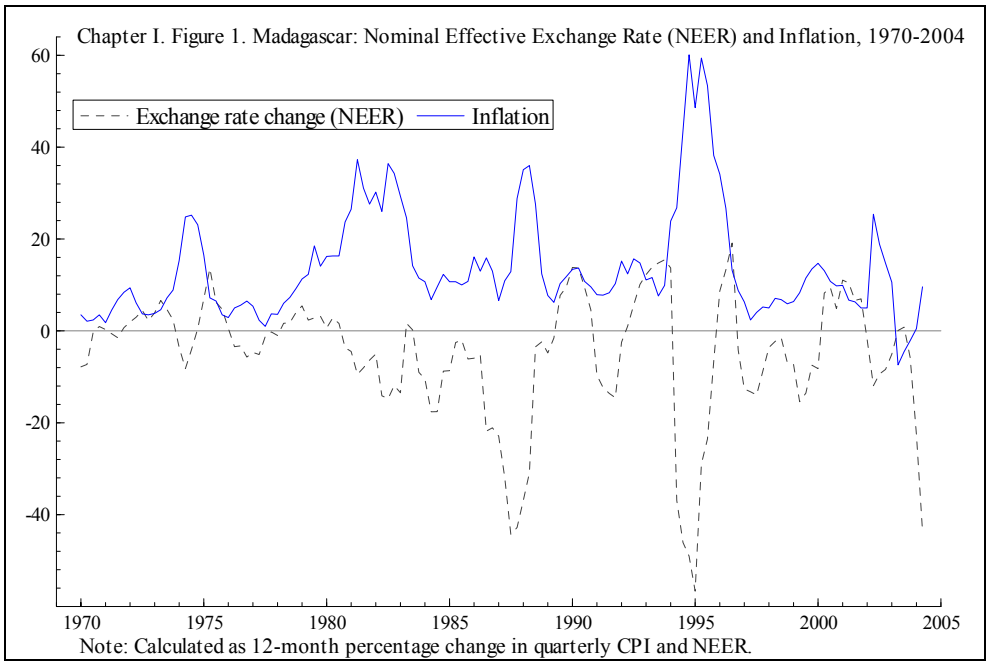
1. Madagascar's exchange rate and inflation has been volatile in recent years, underlining the economy's vulnerability to shocks and policy slippages. Inflation (consumer price index (CPI)) surged from -0.8 percent at end-December 2003 to 27 percent at end-December 2004, compared with an original target of 5 percent. During the same period, the nominal exchange rate depreciated by about 40 percent against the euro, and broad money (M3) grew by 23 percent, exceeding an original target of 12 percent. This chapter applies cointegration analysis and error-correction modeling to study the determinants of inflation in Madagascar. It finds inflation inertia, which may reflect weak financial intermediation and ineffective monetary policy transmission mechanism. Exchange rate pass-through and broad money growth (a policy variable) are also found to be significant determinants of inflation. However, the return to price stability is found to be a slow process, even in a relatively tight monetary policy environment.

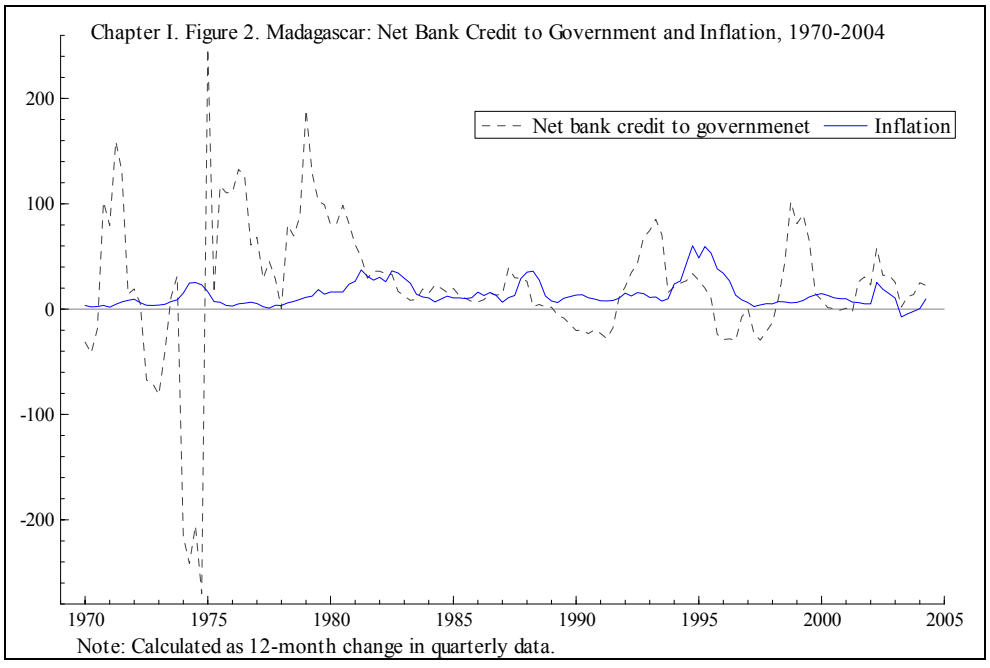
2. This chapter is organized as follows. Section II provides selected stylized facts concerning money and prices in Madagascar. Section III specifies the model used in the empirical work. Data issues and results from cointegration tests are discussed in Section IV. Section V presents the results from estimating the single equation error-correction model for inflation and evaluates its statistical properties, and systems estimation and impulse response analysis are conducted in Section VI.

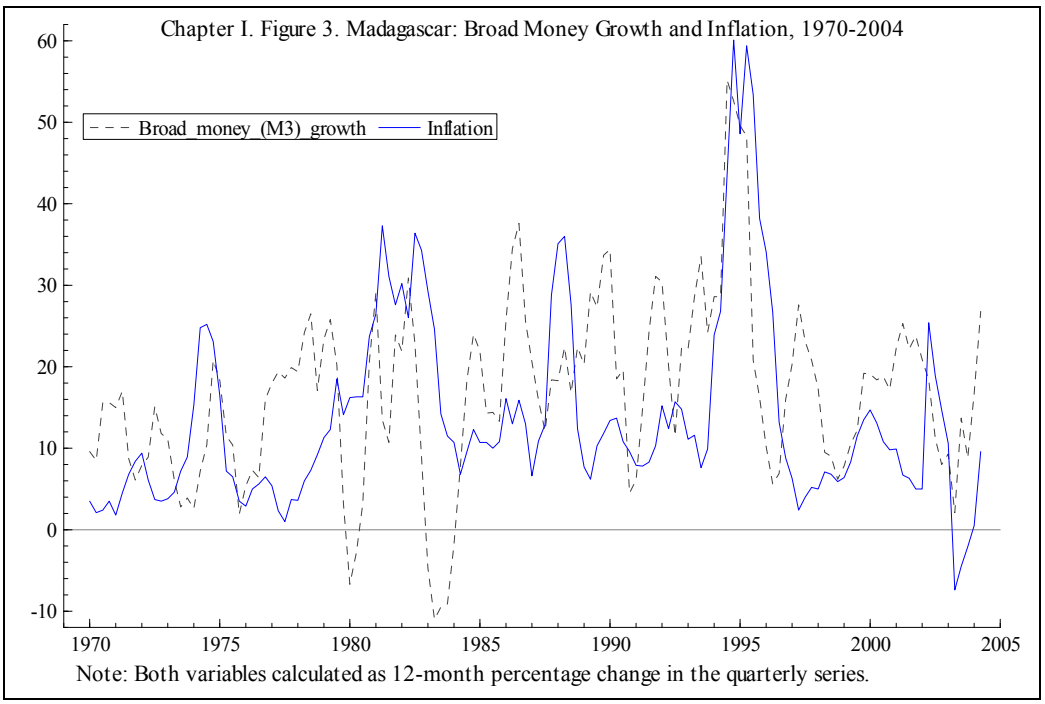
B. Background

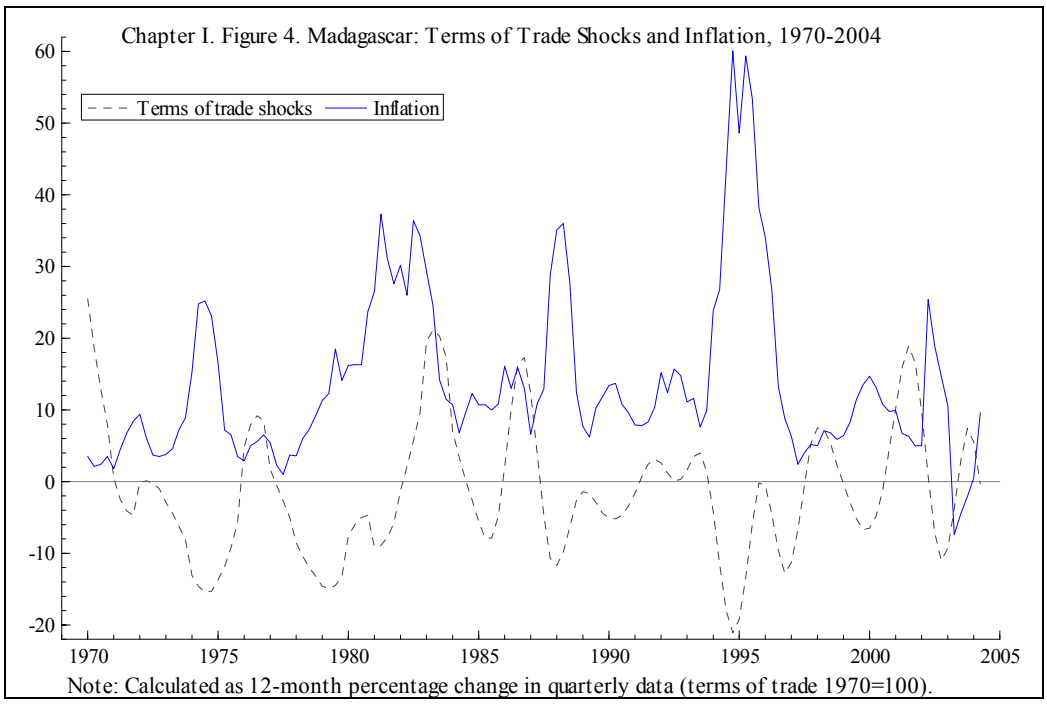
3. A combination of policy inconsistencies, adverse weather conditions (cyclones), terms of trade shocks, and political crises have contributed to swings in the exchange rate and bouts of inflation with varying intensity and duration since 1970. Madagascar left the franc zone in 1973 and experienced a first burst of inflation in 1974 (Figure 1). This inflation experience was short-lived, in part because the Malagasy franc remained pegged to the French franc, which dampened inflationary expectations. A second and more protracted burst of inflation occurred in the early 1980s, following years of large net bank financing of fiscal deficits, high money growth, and persistent terms of trade shocks (Figures 2, 3, and 4). Madagascar abandoned its currency peg with the French franc in 1982 and instituted a crawling peg system from 1982 to 1994, accompanied by frequent step devaluations, notably in 1987. Over the period 1986-88, Madagascar implemented structural reforms supported by the IMF's Structural Adjustment Facility (SAF), including the removal of all impediments to exports (example, licenses and prior authorizations) and import restrictions. A floating exchange rate regime was adopted in 1994, along with the

[1] Prepared by Koffie Nassar.


Chapter I. Figure 1. Madagascar: Nominal Effective Exchange Rate (NEER) and Inflation, 1970-2004
Exchange rate change (NEER)
Inflation
60
40
20
0
-20
-40
1970
1975
1980
1985
1990
1995
2000
2005
Note: Calculated as 12-month percentage change in quarterly CPI and NEER.

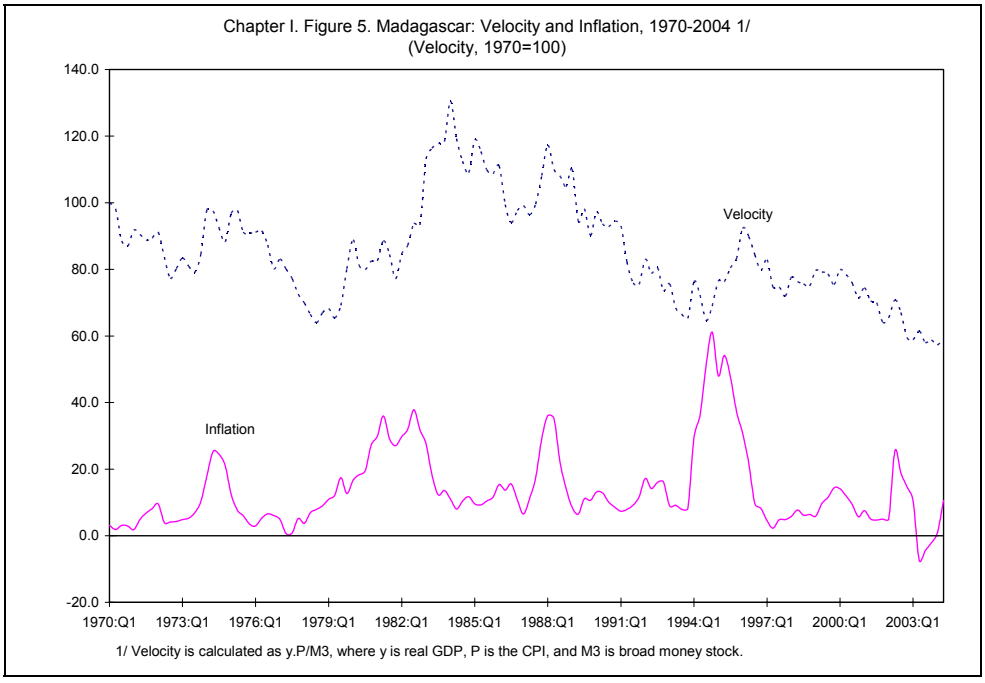

Chapter I. Figure 2. Madagascar: Net Bank Credit to Government and Inflation, 1970-2004
Net bank credit to governmenet
Inflation
200
100
0
-100
-200
1970
1975
1980
1985
1990
1995
2000
2005
Note: Calculated as 12-month change in quarterly data.


Chapter I. Figure 3. Madagascar: Broad Money Growth and Inflation, 1970-2004
Broad_money_(M3)_growth
Inflation
60
50
40
30
20
10
0
-10
1970
1975
1980
1985
1990
1995
2000
2005
Note: Both variables calculated as 12-month percentage change in the quarterly series.


Chapter I. Figure 4. Madagascar: Terms of Trade Shocks and Inflation, 1970-2004
Terms of trade shocks
Inflation
60
50
40
30
20
10
0
-10
-20
1970
1975
1980
1985
1990
1995
2000
2005
Note: Calculated as 12-month percentage change in quarterly data (terms of trade 1970=100).

establishment of an interbank foreign exchange market (MID), based on an auction system. In 2004, the auction system was replaced by a continuous MID.

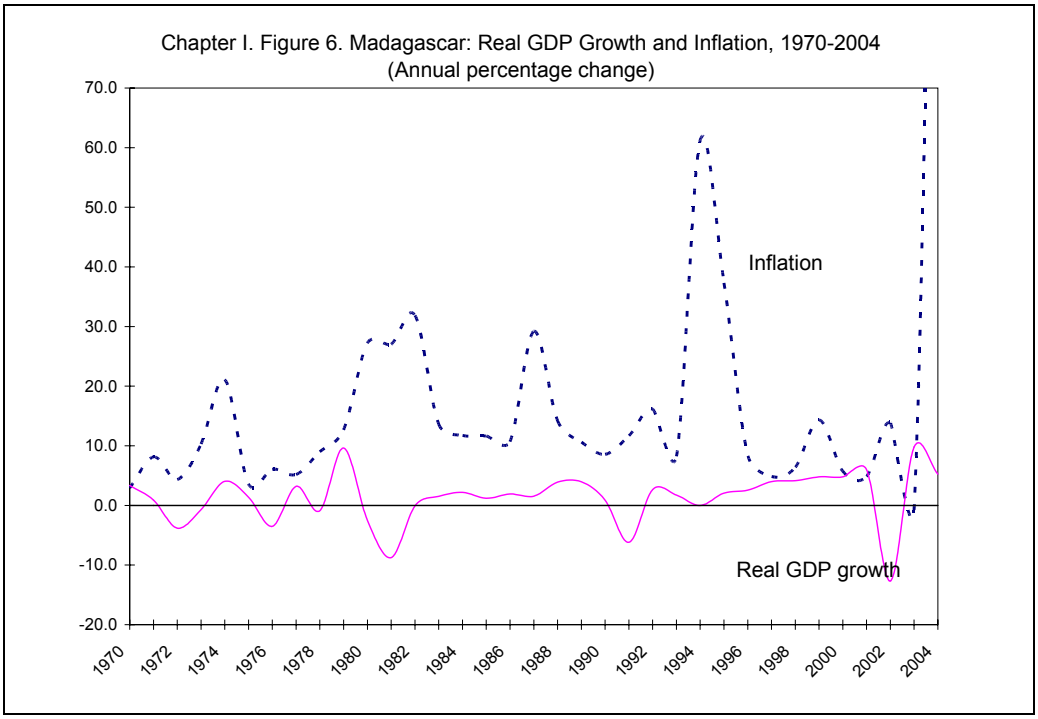
4. Inflation displayed strong correlation with exchange rate movements during periods characterized by high inflation. During the period 1987-2004, Madagascar experienced three large exchange rate depreciations: in June 1987, in May 1994 (following the introduction of a floating exchange rate regime), and in the first half of 2004 (following tax and tariff exemptions of capital goods and selected other imports effective since September 2003). Following the 1987 and 2004 depreciation episodes, inflation soared against a background of moderate inflation; however, inflation had already started to accelerate before the 1994 depreciation.



5. Inflation also showed some correlation with trends in velocity (Figure 5). During 1982-83, the public adjusted, with a lag, to rising inflation and a more flexible exchange rate regime by reducing their real money balances. Thereafter, velocity trended downward, as financial sector reforms deepened[2] and cash holdings (in real terms) began to build up. This

[2] Along with the introduction of the MID in 1994, the banking sector was liberalized and foreign exchange deposit accounts allowed. Treasury bills were introduced in 1997.

downward trend, which lasted from 1984 through 2004, was interrupted temporarily by the inflationary bubbles of 1987 and 1994. With currency substitution allowed in 1994, however, the response of velocity of M3 to inflation remained subdued.



6. The demand for real money balances fell in 2004, despite a tightening of monetary policy. Following a sharp economic slump in 2002 (Figure 6), the central bank lowered the reserve requirement ratio on two occasions—in October 2002 and in January 2003—with a view to accelerating GDP growth. With the exchange rate depreciating sharply and inflationary pressures intensifying in 2004, however, the central bank took successive monetary tightening measures, including three consecutive increases of the reserve requirement ratio. These measures led to an increase in interest rates on treasury bills across the board and absorbed the excess liquidity that had accumulated in the banking system to a point that commercial banks were compelled to borrow from the central bank at higher costs. However, interest rates on deposits remained relatively stable, reflecting, in part, the unwillingness of commercial banks to roll over their stock of treasury bill holdings. Meanwhile, inflation increased sharply, following the adjustment in the exchange rate in the first half of the year. This has led to negative deposit rates in real terms. Consequently, the stock of treasury bills held by the public increased, further weakening demand for real money balances.

C. Model Specification

7. The specification of the inflation equation is a traditional extension of a monetary disequilibrium model to an open economy.[3] It is derived from a theoretical model describing a small economy that has both a tradable goods sector and a nontradable goods sector. The overall price level in logs ($LCPI_t$) is a weighted average of tradable prices ($LCPI_t^T$), and nontradable prices ($LCPI_t^N$):

$$LCPI_t = \lambda\, LCPI_t^N + (1-\lambda)\, LCPI_t^T, \qquad (1)$$

Where λ is the weight of nontradable prices in the price index. The price of tradable goods is determined in the world market, with their price in the domestic economy being a function of the foreign currency price expressed in foreign currency terms ($LFCPI_t$), and the exchange rate expressed in foreign currency per national currency, ($LNEER_t$):

$$LCPI_t^T = LFCPI_t + LNEER_t. \qquad (2)$$

8. The price of nontradables is determined by disequilibrium in the domestic money market, such that inflation (DLCPI) is obtained as

$$DLCPI_t^N = \varphi(LM_t - LM_t^d), \qquad (3)$$

where LM_t is the outstanding stock of money, LM_t^d is the demand for real money balances, and φ is a scale factor representing the relationship between economywide demand and the demand for nontradable goods. The demand for real money balances is assumed to be determined by real income ($LRGDP_t$), foreign interest rates (FINT), and the expected depreciation of the exchange rate (DLNEER). Consequently, inflation in the nontradables sector can be written as:

$$DLCPI_t^N = \varphi\,(LogM_t - P_t - \alpha_1 LogRGDP_t + \alpha_2 FINT_t - \alpha_3 DLNEER_t). \quad (4)$$

9. An increase in the outstanding money stock is expected to result in higher inflation; an increase in real income is expected to increase the demand for money for transaction purposes and, in turn, lead to a decline in inflation; an increase in the opportunity cost of holding money, by reducing the demand for money balances, will result in an increase in inflation; and a depreciation will stoke inflationary expectations.

10. Assuming price homogeneity and a stable money demand function, which are confirmed by the data, the inflation equation can be estimated as follows:[4]

---

[3] See for example Khan and Knight (1991), Moser (1995), Toujas-Bernate (1996), and Callen and Chang (1999) for similar specification.

[4] See Appendix I for the derivation of this equation.

$$DLCPI_t = b_0 + b_1 \sum_{i=1}^{k} DLCPI_{t-i} + b_2 \sum_{i=0}^{k} DLM_{t-i} + b_3 \sum_{i=0}^{k} DLRGDP_{t-i} + b_4 \sum_{i-0}^{k} DLNEER_{t-i} + b_5 \sum_{i-0}^{k} DFINT_{t-i} + b_6 \sum_{i-0}^{k} DLFCPI_{t-i} + b_7 EMCp_{t-1} + \varepsilon_t, \quad (5)$$

where

$$ECMp_t = \beta_1 LCPI_t - \beta_2 LM_t + \beta 3 LRGDP_t - \beta 4 FINT_t$$

corresponds to a measure of disequilibrium in the money market.

D. Data, Unit Root Tests, And Cointegration Analysis

Data

11. The empirical analysis is conducted using quarterly data from 1982:Q1 to 2004:Q2.[5] All variables are in logarithms, except interest rates. Figure 7 plots the individual time series. Due to a lack of a reliable data series of a lower denomination of the money stock, the monetary aggregate used in this study is M3, defined as currency outside the banking system plus demand deposits, time and savings deposits, and foreign currency deposits. M3 is the intermediate target for monetary policy in Madagascar. Alternative financial assets are lacking; indeed, owing to financial controls imposed until the mid-1990s, the only time series of domestic interest rates available is the base rate (*taux directeur*) of the central bank. However, this interest rate shows very little variation over the sample period. The yields on 10-year government bonds in France are used as foreign interest rates.[6] Foreign prices are the CPI (US$, 2000=100) weighted by trade imports from advanced economies. The exchange rate is the nominal effective exchanged rate, defined as foreign currency per unit of local currency. As real GDP (RGDP) is available only in annual frequency, end-of-period values are converted into quarterly data. Furthermore, four dummy variables (dum87Q3, dum94Q1, dum02Q2 and dum02Q3) are used to capture (i) the sharp depreciation of the exchange rate in the third quarter of 1987; (ii) the switch from a crawling peg regime to a flexible exchange rate regime and financial sector reforms initiated in 1994; and (iii) the impact of the political crisis in the second and third quarters of 2002. These four variables enter the dynamic inflation equation.

[5] The data are from the *International Financial Statistics*.

[6] The rate of return on French treasury bonds is expected to be relevant, given the close relationship of Madagascar's business community with France since independence in 1960.

E. Unit Root Tests

12. To avoid spurious regression results, the integrating properties of the variables are investigated using the augmented Dickey-Fuller (ADF) unit root tests (Table 1). The lag length in the ADF regression is selected using the Schwarz information criterion. The ADF tests include a constant term. All variables are found to be nonstationary in levels, but stationary in their first differences (that is, they are I(1)).

Chapter I. Table 1. Madagascar: Augmented Dickey-Fuller (ADF) Statistics for Unit Root Tests

Variables	ADF Statistics		ADF statistics	
	Lags	In levels	Lags	In first differences
LCPI	0	-1.305	0	-7.845 **
LRGDP	5	-0.240	4	-3.524 **
LM3	0	0.230	0	-9.603 **
LNEER	0	-0.654	0	-7.006 **
LFCPI	6	-1.772	5	-3.524 **
FINT	4	-2.181	3	-5.418 **

Note: The estimation period is 1982:Q1-2004:Q2 for all variables. Lags indicate the order of each variable, using the Schwarz info criterion. The ADF statistics are testing a null hypothesis of a unit root in each variable against an alternative of a stationary root. Each regression is run with a constant term. (**) denote rejection at the 5 percent and 10 percent critical values, respectively.

F. Cointegration Analysis

13. After determining the order of integration of the variables, the Johansen procedure is used to test for cointegration among the I(1) variables of Equation 5. The trace eigenvalue statistics reject the null hypothesis of no cointegrating vector in favor of one cointegrating vector at the 1 percent level (Table 2). The price level is expected to be positively related to the money stock and foreign interest rates, but negatively related to real income. The restricted, stable long-run relationship between the price level, the money stock, real income, and foreign interest rates is estimated as

$$LCPI = 0.88*LM3 - 0.99*LRGDP + 0.02*FINT. \quad (6)$$

14. Even though the coefficients are of the right signs, real income and foreign interest rates are not significantly different from zero. This may be due to the fact that GDP is a

relatively poor proxy for transaction demand and quarterly GDP was generated from annual data using the cubic spline method.

Chapter I. Table 2. Madagascar: Cointegration Analysis				
Eigenvalues				
Null hypothesis on	r = 0	r ≤ 1	r = ≤ 2	r = ≤ 3
rank = r		0.28	0.18	0.11
λ trace	54.84**	26.51	9.92	0.30
95 percent critical value				
		Standardized eigenvectors		
	LCPI	*LM3*	*LRGDP*	*FINT*
	1.00	-0.88	0.99	-0.02
		Standardized adjustment coefficient		
	LCPI	*LM3*	*LRGDP*	*FINT*
	-0.19	-0.04	0.03	0.24
	Statistics for testing the significance of a given variable			
	LCPI	*LM3*	*LRGDP*	*FINT*
χ^2 (1)	9.6**	11.1**	3.1	0.7
Note: The estimation period is 1982Q1-2004:Q2.				
The VAR includes five lags on each variable and centered seasonal dummies.				

Chapter I. Table 3. Madagascar: Properties of VAR Residuals				
	LCPI	*LM3*	*LRGDP*	*FINT*
Portmanteau	3.65	4.97	16.05	6.61
Normality test: $\chi^2(2)$	22.39**	2.67	14.34**	2.77
ARCH 1-4 test: F(4,56)	0.56	0.69	2.81*	1.57
Heteroskedasticity test: F(40,16)	0.49	0.42	0.38	0.36

Note:
The portmanteau statistic is a degrees-of-freedom corrected version of the Box and Pierce statistic for each variable and for the system as a whole. See Doornik and Hendry (1997) for details. Normality denotes the results of the Doornik-Hanson test for each variable and for the system as a whole. It checks whether the residuals are normally distributed. ARCH (autoregressive conditional heteroscedasticity) denotes the results of the LM (Lagrange multiplier) tests for autocorrelated squared residuals.

15. Various misspecification tests of the unrestricted vector autoregression (VAR) underlying Equation (7) are reported in Table 3. These include portmanteau, ARCH 1-4, normality, and heteroscedasticity tests, which reveal some problems, including the rejection

at 1 percent critical value of normality for LCPI and LRGDP. It is, however, shown that this is not a problem for the Johansen procedure used in this paper.[7]

16. Having established the existence of a stable long-run relationship for the price level, an error-correction representation of inflation, Equation (5), is estimated in Section V.

G. Determinants of Inflation

17. The error-correction term that captures deviations from the long-run price level is estimated in Section IV. In this section, the error-correction model for inflation is constructed by including the first difference of the error-correction term along with four lags of all the variables in the system. Thus, Equation (5) is estimated, using the ordinary least squares (OLS) estimator, as

$$\begin{aligned} DLCPI_t &= b_0 + b_1 \sum_{i=1}^{k} DLCPI_{t-i} + b_2 \sum_{i=0}^{k} DLM_{t-i} + b_3 \sum_{i=0}^{k} DLRGDP_{t-i} + b_4 \sum_{i-0}^{k} DLNEER_{t-i} \\ &+ b_5 \sum_{i-0}^{k} DFINT_{t-i} + b_6 \sum_{i=0}^{k} DLFCPI_{t-i} + b_7 EMCp_{t-1} + b_8 dum87Q3 + b_9 dum94Q1 + b_{10} dum02Q2 \\ &+ b_{11} dum02Q3 + b_{12} CSeasonal + b_{13} CSeasonal1 + b_{14} CSeasonal2 + \varepsilon_t, \end{aligned} \tag{7}$$

where k=4 is the lag structure; *ECMp* is the error-correction term obtained from Equation (6); and CSeasonals are centered seasonal dummy variables used in the regression.

18. The econometric results of Equation (7) are presented in Table 4 below. The error-correction term enters negatively and significantly, implying that if inflation is 1 percent below its equilibrium level in one quarter, inflation will increase by 0.06 percent in the following quarter. The magnitude of the coefficient of the error-correction term indicates that the adjustment process toward long-run equilibrium of domestic prices is quite slow. All the significant stationary variables that capture the short-run dynamics on inflation also have the expected signs in the parsimonious equation (see column 2 of Table 4). More interestingly, inflation inertia and lagged depreciation are among the dynamic factors that determine inflation in Madagascar. In addition, broad money growth has a short-run positive inflationary effect with no lags. As shown in Figure 8, the estimated Equation (7) fits quite well the quarterly inflation over the period 1982:Q1 to 2004:Q2.

Diagnostic tests

19. A battery of tests was conducted to evaluate the statistical properties of the model. The results for the single-equation parsimonious model are presented in the notes to Table 4.

---

[7] See Gonzalo (1994).

Error autocorrelation, ARCH errors, Normality, heteroscedasticity, and RESET errors are rejected. Overall, the residuals seem to be well behaved.

20. Furthermore, the model is estimated recursively from 1986 to 2004 to examine its stability. The recursive estimates of the coefficients that are significant in the estimated inflation equation are presented in Figure 9. The first seven plots are of the coefficient estimates at each point in the sample together with their approximate 95 percent confidence intervals (±2*SE* shown on either side). The estimates are relatively constant over the sample once past the initial estimates. The eighth plot is of the 1-step ahead residuals (forecast errors), with an approximately 95 percent confidence interval; the confidence bands are again reasonably constant. The final plot of the break-point Chow test shows that constancy is not rejected over the sample period.

H. Impulse Response Analysis

Systems estimation

21. The objective of this section is to trace the effect of standard errors originating from variables of the system on other endogenous variables through the dynamic structure of the VAR. To utilize all the information contained in the data, the full system is estimated using the full information maximum likelihood (FIML) estimator. Table 5 presents the results of the FIML estimation for the three variables of interest: domestic prices, money, and the exchange rate. For brevity, the insignificant regressors are omitted from Table 5.

22. The inflation equation is essentially the same as in the OLS estimation discussed above. The money equation shows that broad money growth depends mainly on lagged inflation, but also on lagged exchange rate, lagged foreign interest rates, and its own lag. An increase in inflation two quarters ago has a positive impact on money, while inflation four quarters ago has a negative impact on money. However, the net impact is positive. The inflation error-correction term is not significant in the money equation. Notice that the impact of an exchange rate depreciation on inflation is much more than that on nominal money growth, which implies that a depreciation causes real money growth to fall. Regarding the exchange rate equation, Table 7 suggests that higher domestic inflation leads to exchange rate depreciation, while money growth leads to exchange rate appreciation, which is counterintuitive. Moreover, the error-correction term for inflation is positively correlated with changes in the exchange rate, indicating that excess supply in the money market leads to an appreciation of the currency.

Impulse response

23. This subsection examines the impact of different shocks on the variables in the model and analyzes the lagged structure of the responses. Each initial shock is assumed to be one standard error shock. The impulse response and cumulative impulse response results are presented in Figure 10 and Figure 11, respectively. The focus is on DLCPI, DLM3, DLFCPI, and DLNEER variables.

24. As Figure 11 shows, a positive shock on domestic prices leads, as expected, to a cumulative depreciation of the nominal exchange rate. The impact of inflation on money, after being positive in the first quarter, dissipates thereafter; this implies that nominal balances fall after a price shock, and so real money balances fall.

25. A shock to nominal money growth briefly leads to a fall in inflation, although this impact fades quickly and becomes inflationary thereafter. This outcome, along with the higher-than-proportionate cumulative increase in nominal money, suggests that the real money stock increases permanently. In addition, following a positive monetary shock, the nominal exchange rate depreciates immediately, but this impact dissipates and becomes cumulatively positive over time. Contrary to expectations, Figure 11 also shows that foreign inflation affects domestic inflation negatively, but domestic money growth positively.

26. A standard error shock to the change in the nominal exchange rate, such as an appreciation (a positive shock), leads immediately to lower inflation, and its impact fades over 10 quarters. The cumulative impact on money growth is positive and larger than the fall in inflation, which suggests that an appreciation of the exchange rate increases real money growth over time.

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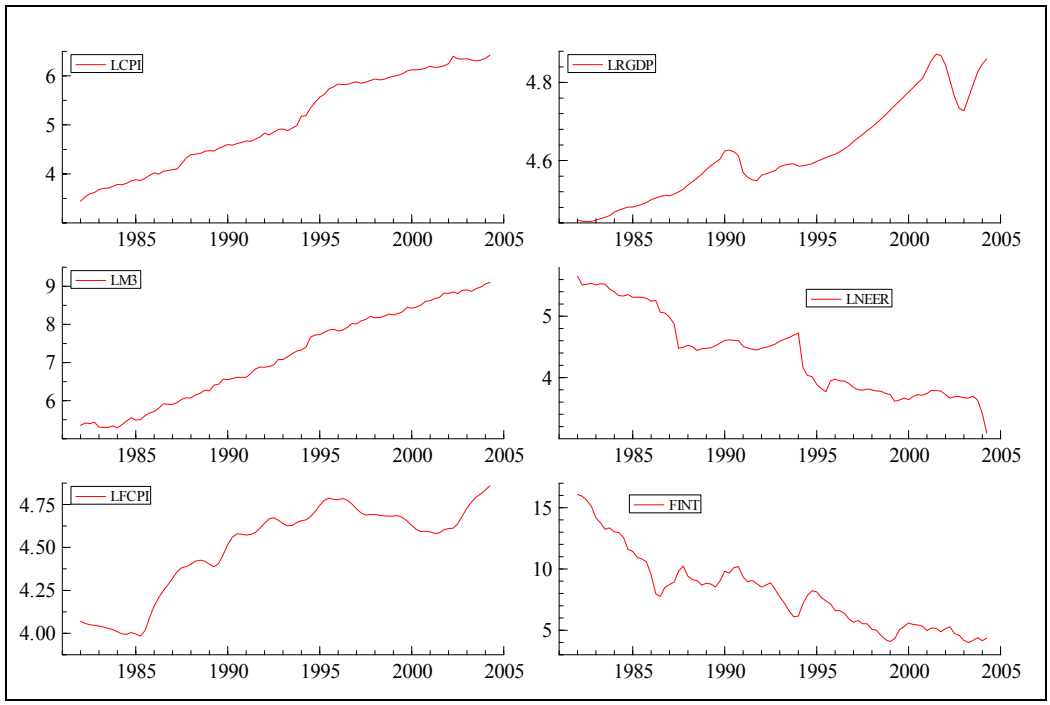
Chapter I. Figure 7. Madagascar: Prices, Income, Money, Exchange Rate,

and Foreign Interest Rates, 1982-2004

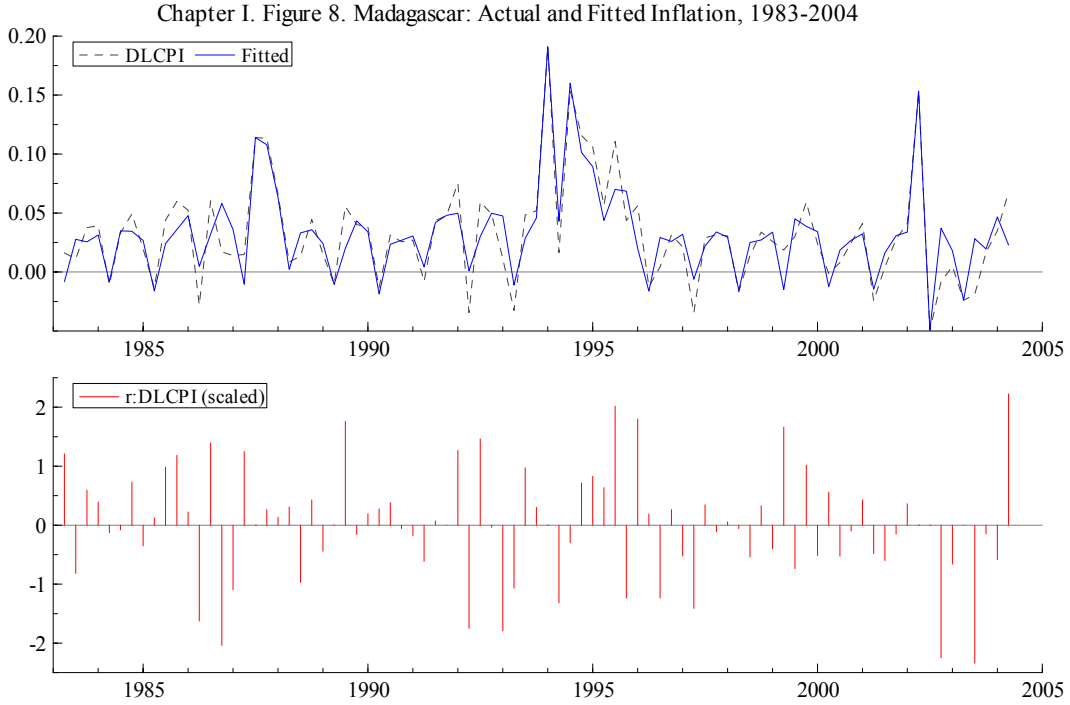


Chapter I. Table 4. Madagascar: Coefficient Estimates of the Error-Correction Inflation Equation

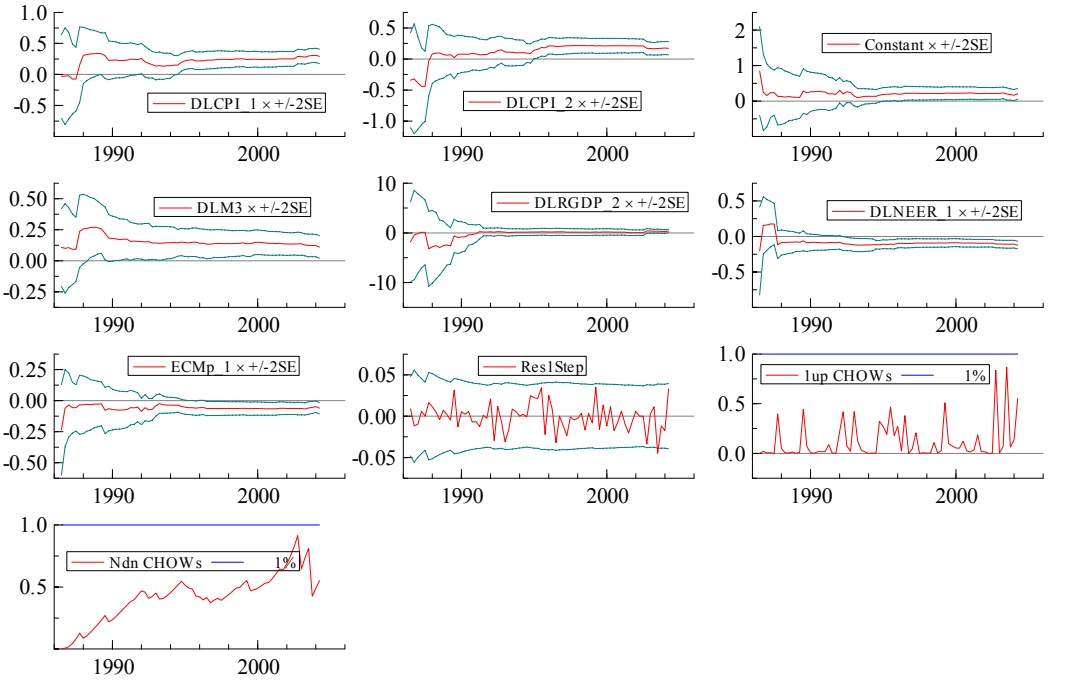
Regressor	Unrestricted Coefficient	Restricted Coefficent	Regressor	Unrestricted Coefficient	Restricted Coefficient
Constant	0.27** (2.34)	0.21** (2.71)	DLNEER(-3)	-0.07* (-1.86)	
DLCPI(-1)	0.16* (1.85)	0.29** (5.09)	DLNEER(-4)	-0.04 (-0.98)	
DLCPI(-2)	0.08 (1.04)	0.17** (3.25)	DLFCPI	0.17 (0.47)	
DLCPI(-3)	0.03 (0.48)		DLFCPI(-1)	0.32 (0.4)	
DLCPI(-4)	0.14 (1.86)		DLFCPI(-2)	-0.86 (-0.86)	
ECM(-1)	-0.08** (-2.3)	-0.06** (-2.64)	DLFCPI(-3)	0.95 (1.16)	
DLRGDP	-0.04 (-0.11)		DLFCPI(-4)	-0.7* (-1.82)	
DLRGDP(-1)	-0.62 (-1.44)		DFINT	-0.002 (-0.23)	
DLRGDP(-2)	0.6 (1.43)	0.37** (2.09)	DFINT(-1)	0.01 (0.95)	
DLRGDP(-3)	0.62 (1.39)		DFINT(-2)	0.01 (0.93)	
DLRGDP(-4)	-0.23 (-0.54)		DFINT(-3)	-0.01* (-1.69)	
DLM3	0.11 (1.5)	0.11** (2.44)	DFINT(-4)	0.01 (1.36)	
DLM3(-1)	0.05 (0.7)		Dum87Q3	0.07** (2.43)	0.07** (3.24)
DLM3(-2)	-0.05 (-0.70)		Dum94Q1	0.15** (6.32)	0.13** (6.47)
DLM3(-3)	-0.08 (-1.17)		Dum02Q2	0.14** (5.15)	0.16** (7.65)
DLM3(-4)	-0.02 (0.29)		Dum02Q3	-0.12** (-4.0)	-0.11** (-5.1)
DLNEER	-0.01 (-0.38)		Cseasonal	0.01 (0.78)	
DLNEER(-1)	-0.11** (-3.31)	-0.12** (-4.54)	Cseasonal(-1)	-0.02* (-1.83)	-0.05** (-9.5)
DLNEER(-2)	-0.05 (-1.45)		Cseasonal(-2)	0.01 (0.78)	
R^2				0.89	0.82

Notes: 1. t-statistics are in parentheses. 2. (**) indicates significant at 5 percent level; (*) indicates significant at 10 percent level. 3. Diagnostic tests of the restricted model: testing for error auto regressive (AR 1-5) test F(5,68)=1.1584 [0.3387]; Auto regressive conditional heteroscedasticity (ARCH 1-4) test F(4,65) = 1.0067 [0.4106]; Normality test $\chi^2(2)$ = 0.41931 [0.8109]; heteroscedasticity test F(17,55) = 0.90981 [0.5665]; and RESET test F(1,72) = 0.45876 [0.5004].

Chapter I. Figure 8. Madagascar: Actual and Fitted Inflation, 1983-2004



Chapter I. Figure 9. Madagascar: Stability Tests of the Restricted Inflation Equation

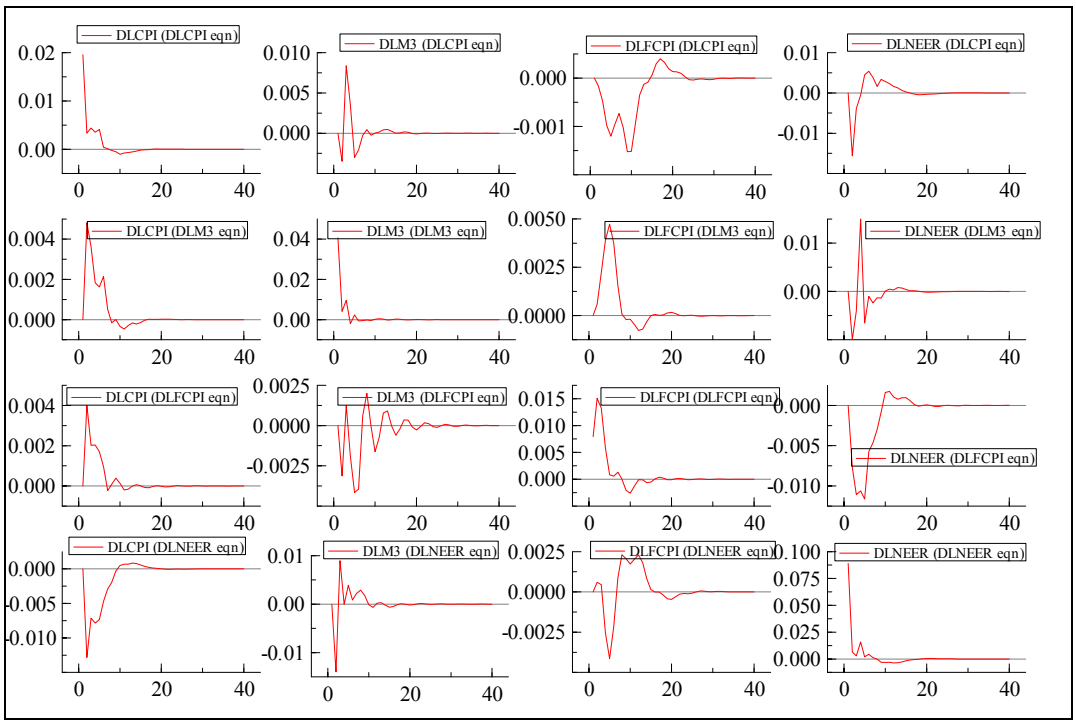


Chapter I. Table 5. Madagascar: FIML Estimates of the Error-Correction System

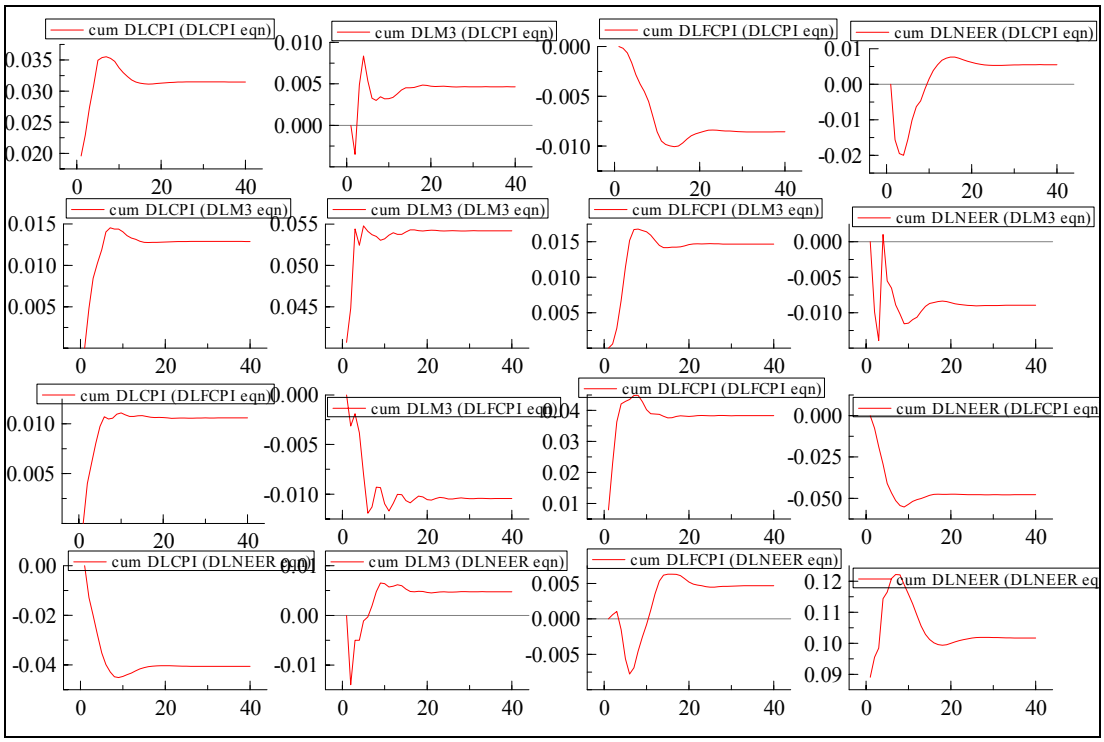
Regressor	DLCPI	DLM3	DLNEER
Constant	0.28** (2.68)		-1.18** (-2.54)
DLCPI(-2)	0.15* (1.85)	0.34** (2.08)	-0.78** (-2.19)
DLCPI(-4)		-0.33** (-2.21)	
ECM(-1)	-0.08** (-2.6)		0.34** (2.52)
DLRGDP(-1)	-0.64* (-1.82)		
DLRGDP(-3)	0.84* (1.96)		
DLM3(-2)		0.22* (1.71)	
DLM3(-3)			0.7** (2.53)
DLNEER(-1)	-0.13** (-4.1)	-0.16** (-2.41)	
DLNEER(-3)	-0.07** (-2.04)		
DLNEER(-3)	-0.08** (-2.46)		
DLFCPI(-1)	0.61* (1.87)		
DLFCPI(-2)	-1.06* (-1.76)		
DLFCPI(-4)	-0.67* (-2.01)		
DFINT(-2)		0.03** (2.1)	
DFINT(-3)	-0.02** (-2.42)		
DFINT(-4)	0.01* (1.68)		
Dum87Q3	0.07** (2.83)		-0.32** (-2.91)
Dum94Q1	0.15** (6.87)		0.17* (1.82)
Dum02Q2	0.13** (5.49)		
Dum02Q3	-0.13** (-4.58)		0.22* (1.79)

Notes: 1. t-statistics are in parentheses. 2. (**) indicates significant at 5 percent level; (*) indicates significant at 10 percent level. 3. Diagnostic tests: testing for error auto regressive (EGE-AR) 1-5 test $F(180,108)=1.3150$ [0.0602]; Normality test $\chi^2(12)=53.537$ [0.0000]**; heteroscedasticity test $\chi^2(1134)=1110.1$[0.6883].

Chapter I. Figure 10. Madagascar: Impulse Response in the Full Model



Chapter I. Figure 11. Madagascar: Cumulative Impulse Response in the Full Model



CHAPTER I. APPENDIX I: DERIVATION OF THE INFLATION EQUATION

$$P_t = \lambda P_t^N + (1-\lambda)\left(P_t^* + E_t\right)$$

$$\Delta P_t = \lambda \Delta P_t^N + (1-\lambda)\left(\Delta P_t^* + \Delta E_t\right)$$

$$\Delta P_t^N = \varphi\left(\frac{M_t^s}{P_t} - \frac{M_t^d}{P_t}\right)$$

Assuming homogeneity,

$$M_t^d = P_t + \alpha_1 y_t - \alpha_2 i_t + \alpha_3 \Delta E_t = \lambda P_t^N + (1-\lambda)\left(P_t^* + E_t\right) + \alpha_1 y_t - \alpha_2 i_t + \alpha_3 \Delta E_t$$

$$P_t^N = P_{t-1}^N - \lambda\varphi P_t^N + \varphi M_t - \varphi\alpha_1 y_t + \varphi\alpha_2 i_t - \varphi\alpha_3 \Delta E_t - \varphi(1-\lambda)\left(P_t^* + E_t\right)$$

$$(1+\lambda\varphi)P_t^N = P_{t-1}^N + \ldots$$

$$P_t^N = \frac{1}{1+\lambda\varphi} P_{t-1}^N + \frac{\varphi}{1+\lambda\varphi} M_t - \frac{\varphi\alpha_1}{1+\lambda\varphi} y_t + \frac{\varphi\alpha_2}{1+\lambda\varphi} i_t - \frac{\varphi\alpha_3}{1+\lambda\varphi}\Delta E_t - \frac{\varphi}{1+\lambda\varphi}(1-\lambda)\left(P_t^* + E_t\right)$$

$$P_t = \frac{\lambda}{1+\lambda\varphi} P_{t-1}^N + \frac{\lambda\varphi}{1+\lambda\varphi} M_t - \frac{\lambda\varphi}{1+\lambda\varphi}\left[\alpha_1 y_t - \alpha_2 i_t + \alpha_3 \Delta E_t\right] - \frac{\gamma\varphi}{1+\lambda\varphi}(1-\lambda)\left(P_t^* + E_t\right) + (1-\lambda)\left(P_t^* + E_t\right)$$

$$\lambda P_{t-1}^N = P_{t-1} - (1-\lambda)\left(P_{t-1}^* + E_{t-1}\right)$$

$$P_t = \frac{1}{1+\lambda\varphi}\left[P_{t-1} - (1-\lambda)\left(P_{t-1}^* + E_{t-1}\right)\right] + \frac{\lambda\varphi}{1+\lambda\varphi} M_t - \frac{\lambda\varphi}{1+\lambda\varphi}\left(\alpha_1 y_t - \alpha_2 i_t + \alpha_3 \Delta E_t\right) + (1-\lambda)\left(P_t^* + E_t\right)\left[1 - \frac{\lambda\varphi}{1+\lambda\varphi}\right]$$

$$P_t = \frac{1}{1+\lambda\varphi} P_{t-1} + \frac{1-\lambda}{1+\lambda\varphi}\left[\Delta P_t^* + \Delta E_t\right] + \frac{\lambda\varphi}{1+\lambda\varphi} M_t - \frac{\lambda\varphi}{1+\lambda\varphi}\left[\alpha_1 y_t - \alpha_2 i_t + \alpha_3 \Delta E_t\right]$$

Define

$$k \equiv \frac{1}{1+\lambda\varphi} \in (0,1)$$

$$1-k \equiv 1 - \frac{1}{1+\lambda\varphi} = \frac{\lambda\varphi}{1+\lambda\varphi} \in (0,1)$$

$$P_t = kP_{t-1} + k(1-\lambda)\Delta P_t^* + (1-k)\left[M_t - \alpha_1 y_t + \alpha_2 i_t\right] + \left[k(1-\lambda) - (1-k)\alpha_3\right]\Delta E_t$$

$\left[k(1-\lambda) - (1-k)\alpha_3\right] = \phi \succ 0,$ positive if $\alpha_3 \prec 0.$

$$\Delta P_t = k(1-\lambda)\Delta P_t^* + \phi\Delta E_t - (1-k)P_{t-1} + (1-k)\left[\Delta M_t - \alpha_1 \Delta y_t + \alpha_2 \Delta i_t\right] + (1-k)\left[M_{t-1} - \alpha_1 y_{t-1} + \alpha_2 i_{t-1}\right]$$

$$\Delta P_t = k(1-\lambda)\Delta P_t^* + \phi\Delta E_t + (1-k)\left[\Delta M_t - \alpha_1 \Delta y_t + \alpha_2 \Delta i_t\right] + (1-k)\left[M_{t-1} - P_{t-1} - \alpha_1 y_{t-1} + \alpha_2 i_{t-1}\right],$$

where

$\left[M_{t-1} - P_{t-1} - \alpha_1 y_{t-1} + \alpha_2 i_{t-1}\right]$ is the error-correction term.

III. COMPETITIVENESS IN MADAGASCAR: AN ASSESSMENT OF THE REAL EFFECTIVE EXCHANGE RATE[8]

A. Introduction

1. The objective of this chapter is to estimate a fundamental real effective exchange rate (FEER) based on long-run fundamentals and estimate the short-term factors that explain deviations from the real effective exchange rate (REER) from the FEER, allowing us to estimate the behavioral effective exchange rate (BEER). At any point in time and, indeed, for extended periods of time, the actual real effective exchange rate may deviate from its long-run level because of policy variables or short-term shocks. It is therefore important to compare the real exchange rate from the FEER and the BEER.

5. We find that at end-2004, following the sharp nominal depreciation of the currency, the real effective exchange is below its long-run fundamental effective exchange rate (determined by the terms of trade, relative productivity, and the net wealth of the country) and to the BEER (mostly determined by short-term factors or exogenous shocks, fiscal policy, and trade agreements). Controlling for these short-term factors, the scope of the discrepancy between the real exchange rate and the BEER remains significant. However, since end-2004, it is likely that part of the real depreciation has been reversed following the combination of a stable nominal exchange rate and the high level of inflation in the first months of 2005.

6. The section takes a long-term approach in the estimation of the FEER. The FEER is assumed to be driven by productivity relative to partner countries, the net foreign asset position as a measure of wealth of the country, and the terms of trade. Positive long-run productivity and wealth shocks are expected to appreciate the FEER. Productivity shocks will tend to reduce the price of tradable goods and increase demand for nontraded goods, therefore leading to an appreciation in the FEER. Permanent shocks in the nation's wealth will also tend to appreciate the equilibrium exchange rate by increasing the demand for nontradable goods. The effect of the terms of trade is ambiguous. While the income effect will tend to appreciate the effective exchange, the substitution effect will tend to depreciate it. In developing countries, the literature finds that the income effect dominates.[9]

7. Potential factors behind deviations of the REER from the FEER are monetary and fiscal policy indicators, productivity, and terms of trade shocks. We also control for the exchange rate policy, Madagascar experienced episodes of fixed and crawling pegs and, more recently, a floating exchange rate. The exchange rate regime can be divided into three periods: from 1982 to early 1991, the authorities operated in a de facto crawling peg regime, from 1991 to the beginning of 1994, the country was under a de facto fixed exchange rate

[8] Prepared by Samir Jahjah.

[9] Sebastian Edwards : " Exchange Rates in Developing Countries".

regime, and from mid-1994 to the present, the economy has operated under a floating exchange rate regime. We show that deviations from the FEER depend on the exchange rate regime.

8. In Section II, we will describe the data set and the methodology used in the analysis. In Section III, we will present the main findings.

B. Data and Methodology

Data set

9. We use quarterly data from 1980 to 2003. The variables used in estimating the long-run FEER are relative productivity, net wealth, and terms of trade. For productivity, we construct a relative productivity index based on output per worker in Madagascar and an international productivity index (source: World Economic Outlook). Wealth is measured by the ratio of net foreign assets to nominal GDP. Terms of trade are represented by the price of Madagascar exports divided by the price of imports into Madagascar.

10. A set of other variables is used to explain the deviations of the REER from the FEER. Monetary policy is measured by the ratio of reserve money to GDP, public expenditures (as a share of GDP) is a measure of government consumption. We include two dummies, one to capture the African Growth Opportunity Act (AGOA) and its favorable impact on export competitiveness, another one to capture the large scaled tax exemptions on imported goods. This set of variables is used to determine the short-term dynamic and explain their respective contribution to deviations of the real effective exchange rate from its FEER.

Methodology

11. We first test all variables to determine their unit root properties. Variables found to be stationary will not be used in the estimation of the long-run relationship of the real effective exchange rate. Second, the long-run REER equation is estimated:

$$REER_t = X_t\alpha + \varepsilon_t, \tag{1}$$

where X is a vector of explanatory variables. The next stage is to use the estimated coefficients α to compute the long-run FEER using the Hodrik-Prescott filtered explanatory variables. The idea is to decompose X into its long-term trend component $\overline{X}$ and the short-term shocks components $\widetilde{X}$. *FEER* is then determined according to

$$FEER_t = \overline{X}\hat{\alpha}. \tag{2}$$

12. Deviation is then defined as the difference between the actual real exchange rate and the FEER.

13. The next stage consists in explaining the main determinants of deviatios, using as explanatory variables shocks to their long-term components $\widetilde{X}$ and a set of other short-term shocks *Y*. The following equation will be estimated:

$$deviation_t = \widetilde{X}\beta_1 + Y\beta_2 + \eta_t \tag{3}$$

C. Results

Estimating the long-run equilibrium real effective exchange rate (REER)

14. Most variables have a unit root, with the notable exception of the (log of) the ratio of government expenditure to GDP and rreserve money to GDP (see appendix).

15. We estimate Equation.(1), using as explanatory variables relative productivity, net foreign assets, and the terms of trade. Testing for stationarity in the residuals, following Engle-Granger (1987), we accept the hypothesis of a long-run relationship between these variables; that is, the four variables are cointegrated. Results are summarized in Table 2.

16. All coefficients have the expected sign, suggesting that the long-run REER is positively explained by productivity and net foreign assets. The coefficient of the terms of trade variable is negative, suggesting that the substitution effect dominates the revenue effect; that is, in the presence of a positive shock on the terms of trade, consumption will switch away from nontradable goods toward tradable goods. This result is robust to different specifications. Cady (2003) finds that terms of trade are not significant. In a recent study on real exchange rate misalignments and economic performance, Aguirre and Calderon (2005) find a negative relationship between the terms of trade and the real exchange rate for 20 countries (out of sample of 60). It is also possible that inappropriate exchange rate intervention, as well as structural changes in the exchange rate regime, contributes to this negative coefficient. To that effect, in the next subsection we control for structural changes in the conduct of exchange rate policy, and we show that the response of the real exchange rate to terms of trade shocks is dependent on the exchange rate regime.

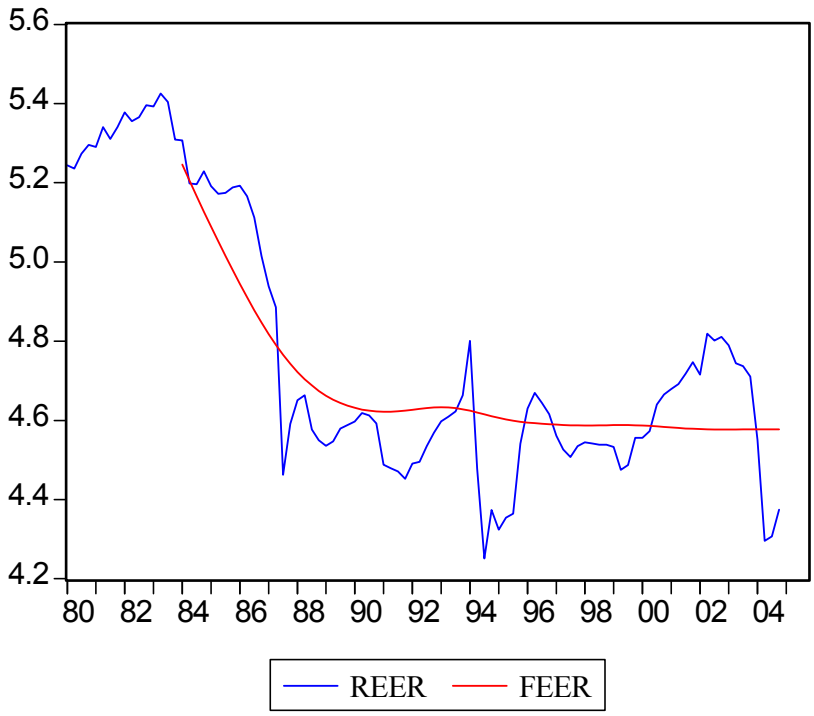
Chapter II. Table 2. OLS Estimates of a Long-Run Relationship

Dependent variables : log(reerq)		
Variables	Model 1 Coefficients *(t-stat)*	
Log(produc)	0.370 *10.36*	***
NFAGDP	0.007 *6.16*	***
Log(tot_weo)	-0.693 *-5.04*	***
Constant	6.484 *12.07*	***
R-Square	0.61	
R-square adj.	0.59	
DW	0.58	
Number of observations	80	

Notes: (***) represents significance at the 1 percent level.

17. Using the estimated coefficients of Model 1, we compute the equilibrium FEER, using Equation (2). That is, we apply the model on the Hodrik-Prescott-filtered explanatory variables. Alternative filtering methods could be applied, but the Hodrik-Prescott is the most appropriate to extract long-run trends in the variable. In Figure 1, we compare the FEER to the actual REER. Assuming the long-term components of productivity, net foreign asstes (NFA) and the terms-of trade do not change in 2004, the REER is about 20 percent below its FEER at end-2004. Based on the long-run fundamentals, the real effective exchange rate is below its fundamental level. We need to determine to what extent this deviation is explained by policy or exogenous factors.

Chapter II. Figure 1. Fundamental Effective Exchange Rate (FEER) and the Real Effective Exchange Rate (REER)



18. It is important to stress again that this large deviation at end-2004 is in terms of the fundamental and long-run factors. The long-run equilibrium rate has been relatively stable since 1993, reflecting declining terms of trade and improved NFA position, compensated by a declining productivity.

19. Deviations of the real effective exchange rate to the long run level would depend on the temporary shocks and on monetary and fiscal policies. These factors could explain a misalignment in terms of both the extent of the deviation and its duration. In the next subsection, we estimate the impacts of policy as well as exogenous factors on deviations.

Estimating determinants of REER misalignments

20. We analyze the factors explaining deviations of REER from the FEER. Using the computed deviations, we can now estimate Equation (3), using shocks on productivity, money supply, and the terms of trade as the main explanatory variables. We also add public expenditures, a dummy capturing the AGOA, given the the strong response of Malagasy exports to it facilitated access to the U.S. market; and a dummy capturing the broad-based tax exemptions on investment and other kind of goods.

21. Our sample period covers episodes of different exchange rate regimes, which can affect the response of the exchange rate to various expenditure or monetary shocks. To this end, we add interaction variables to evaluate the impact of various variables under alternative exchange rate regimes. We include interactive variables, of the type *x*float* and *x*peg ,* which represent the value of variable *x* under a floating exchange rate regime and a fixed peg respectively. Madagascar switched to a floating exchange rate regime in 1994; before that, it experienced crawling and fixed pegs. Results are summarized in Table 3.

22. Variables that are found to affect real effective deviations significantly are productivity shocks, monetary shocks, NFA shocks, public expenditure, and the AGOA dummy (model 1). Productivity shocks yield a real appreciation of the currency. Monetary policy acts in two stages: a monetary expansion policy leads to a real appreciation of the currency followed by a real depreciation. This results is puzzling, because one would first expect a depreciation in the nominal exchange rate followed by a real appreciation as inflation picks up. One possible explanation could be that the exchange rate has been heavily managed and the authorities have prevented the nominal exchange rate freely, therefore delaying the expected nominal depreciation. The AGOA leads to a real appreciation of the currency through its positive and significant impacts on export competitiveness in the textile industry. We prefer to use AGAO as a short-term factor rather than a long-term one: even though it is set to expire in 2015, Madagascar benefited mostly from its third party provision (AGOA III), which will expire in 2007.

23. Short-term terms of trade shocks have no impact on the misalignment. One explanation, as mentioned in the introduction, might be related to the important structural changes the economy experienced, including the move to a floating exchange rate regime in 1994. We capture these structural changes in models 2-3, and we conclude that the real effective exchange rate response to terms of trade shocks depends on the exchange rate regime.

24. Public expenditures have a negative but not very significant impact on the real exchange rate, while the prior would be that consumption of nontradables would increase, as would their prices. More research is needed to determine the composition of public expenditure. It is possible that in developing countries there is no fundamental difference between public expenditures and monetary policy response because fiscal expansions are often associated with an accommodating monetary policy. [10] This result could also reflect that increases in public expenditure concentrated more on imported goods than on nontradable goods. In support of this view, the ratio of the wage bill to GDP has been well contained and even declined throughout the period.

25. Model 2 decomposes the terms of trade shocks into three variables, capturing the interaction of terms of trade changes with the exchange rate regimes. The impacts of terms of trade shocks depend on the nature of the exchange rate regime. Under a fixed peg, the terms

[10] Edwards (op.cit,).

of trade tend to have a positive impact on the deviation; that is, it appreciates the REER, while under the floating exchange rate regime, the contribution of terms of trade shocks to the deviation is negative.

26. In Model 3, we see that the response to monetary policy is invariant across exchange rate regimes, suggesting that deviations from the long-run real effective exchange rate respond in the same way. In the short run, both under a fixed and a flexible peg, expansionary monetary policy yields to a real appreciation of the currency.

Chapter II. Table 3. OLS Estimates of deviations from the long-run REER equilibrium

Dependent variables : deviation from the long-run REER

Variables	**Model 1** Coefficients *(t-stat)*	**Model 2** Coefficients *(t-stat)*	**Model 3** Coefficients *(t-stat)*	**Model 4** Coefficients *(t-stat)*	**Model 5** Coefficients *(t-stat)*	**Model 6** Coefficients *(t-stat)*
Productivity shock	0.176 **	0.378 **	0.355 *	0.179 **	0.387 **	0.368 *
	2.092	*3.809*	*3.214*	*2.122*	*3.925*	*3.344*
Terms of trade shock	-0.086			-0.086		
	-1.049			*-1.057*		
Terms of trade*peg		1.799	1.857		1.859	1.886
		3.759	3.691		3.898	3.769
Terms of trade*crawl		-0.142	-0.130		-0.141	-0.132
		-1.107	-0.987		-1.111	-1.005
Terms of trade*float		-0.186 *	-0.186 *		-0.193 *	-0.193 *
		-1.719	-1.696		*-1.796*	-1.776
Monetary shock	0.127 **	0.169 **		0.129 **	0.174 **	
	2.265	3.176		*2.308*	3.286	
Monetary shock*peg			0.173 **			0.181 **
			2.900			3.047
Monetary shock*crawl			0.166			0.180
			2.499			2.686
Monetary shock*float			0.166 **			0.176 **
			2.777			2.949
Monetary shock (-2)	-0.171 ***	-0.217 ***	-0.217 ***	-0.177 ***	-0.226 ***	-0.224 ***
	-3.091	-4.191	*-3.988*	*-3.166*	-4.368	*-4.118*
NFA shock (-1)	0.003 ***	0.002 ***	0.002 ***	0.003 ***	0.002 ***	0.002 ***
	3.097	1.996	2.007	*3.055*	1.918	1.923
NFA shock(-1)*peg						
NFA shock(-1)*float						
Gov. expenditure	-0.098 *	-0.127 *	-0.129	-0.086 *	-0.110 *	-0.103
	-1.337	*-1.762*	-1.496	*-1.156*	*-1.521*	-1.171
AGOA	0.091 ***	0.110 ***	0.113 ***	0.099 ***	0.123 ***	0.125 ***
	3.007	*3.777*	*3.754*	*3.136*	*4.054*	*4.010*
Tax exemption				-0.049	-0.070	-0.069
				-0.903	*-1.414*	-1.361
Deviation(-1)	0.581 ***	0.426 ***	0.435 ***	0.582 ***	0.423 ***	0.428 ***
	6.960	5.019	*4.932*	*6.967*	*5.015*	*4.869*
Constant	0.355 **	0.448 **	0.460	0.327 **	0.409 **	0.375
	1.653	2.225	1.519	*1.503*	2.029	1.221
R-Square	0.77	0.82	0.82	0.78	0.82	0.82
R-square adj.	0.75	0.79	0.78	0.75	0.79	0.79
DW	1.65	1.31	1.30	1.68	1.36	1.33
Number of observations	79	79	79	79	79	79

Notes:
(1) ***, **, and * denotes the significance at the 1, 5, and 10 percent level respectively.
(2) Peg and Float are dummies to account for the nature of the exchange rate regime, pegged will take a value of 1 during periods the country is not under a floating exchange rate regime.

27. In models 4 to 6, we add a dummy capturing the tax exemptions granted on imported investment (and some consumer) goods. The tax exemption led to a large increase in imports and to the depreciation of the currency up to a point where demand and supply for foreign exchange are equal. As expected, the sign is negative although not significant.

28. To sum up, in the short term, misalignments are mainly driven by productivity shocks, short-term monetary expansions, or shocks on the net wealth of the country.

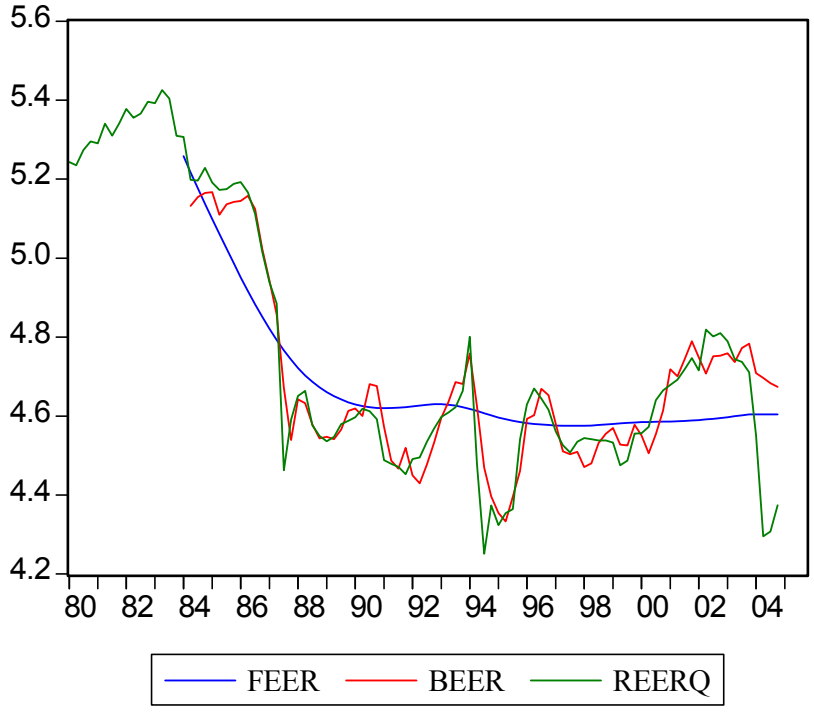
However, the dynamics depend strongly on the nature of the exchange rate regime. It should be noted that our exchange rate regime dummies are probably capturing other elements, such as the liberalization of the economy and the move toward a more market-oriented economy, which coincided with the move toward a flexible exchange rate regime. The AGOA variable is strongly significant and suggests that the removal of the access would trigger a sharp depreciation of the currency in the short term, away from its fundamental level. Contributions of policy variables, such as the ratio of reserve money to GDP and public expenditures, are significant.

29. Based on the estimation of models 1 to 3, we can estimate the behavioral real effective exchange rate (BEER)—that is, the real effective exchange rate explained by the FEER and the factors described above. We derive the BEER as

$$BEER_t = FEER_t + \hat{deviations}$$

30. We can determine the contribution of the variables in the deviation equation in explaining the difference between the FEER and the REER. Figure 2 compares the FEER, BEER and the actual REER, with data expanded to include 2004 preliminary estimates.

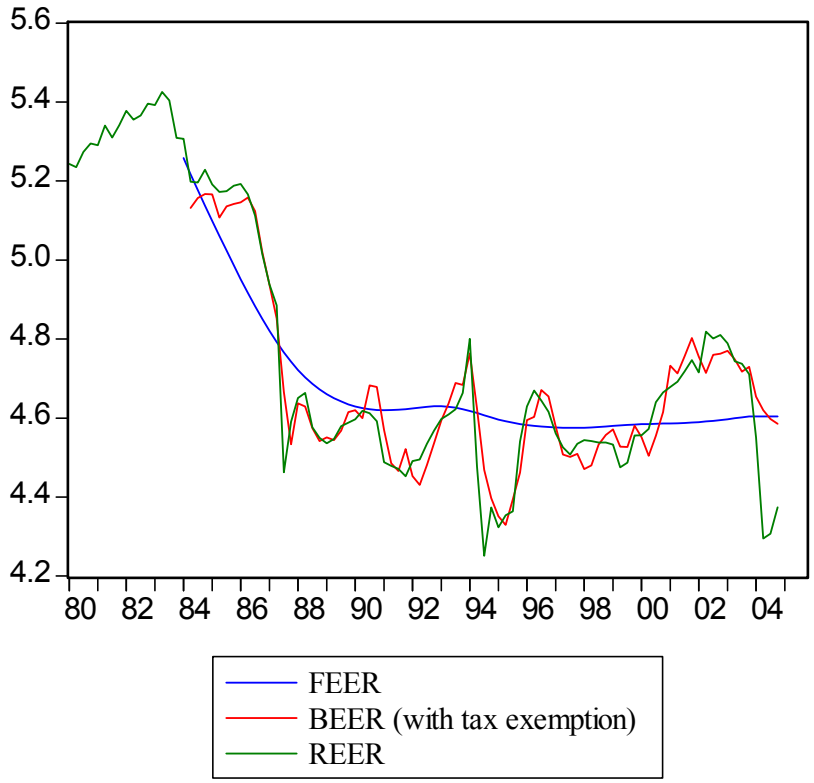
Chapter II. Figure 2. Behavioral and Fundamental Real Effective Exchange Rate

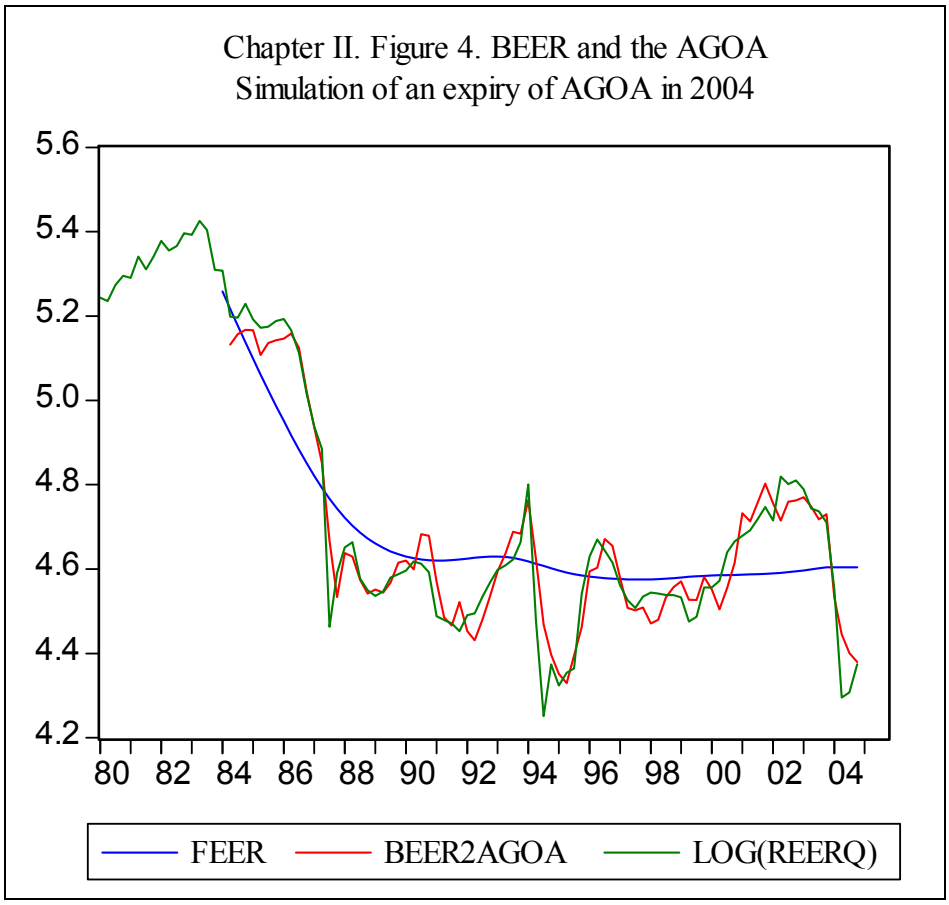


31. Misalignment can be defined as the difference between the REER and the BEER; that is this is the deviation of the real effective exchange rate not accounted for by the explanatory variables in the deviation equations. At end-2004, the real exchange rate is around 27 percent below the BEER. Controlling for the tax exemption, the discrepancy is reduced to below 20 percent (Figure 3).

32. An interesting exercise it to estimate the BEER by simulating the expiration of AGOA in 2004. Doing so, we find that the REER is very close to its BEER (Figure 4). This suggests that, in the near future, the expiration of AGOA III, which benefited Madagascar most, carries with it the risk of a possible depreciation of the real exchange rate.

Chapter II. Figure 3. Behavioral and Fundamental Real Effective Exchange Rate (with tax exemption)





33. To sum up, the depreciation of the real exchange rate was rapid and of a sizable amount. The study indicates that the current real effective exchange rate is below its long-term equilibrium. Several factors explain this discrepancy: monetary policy, tax exemption, and terms of trade shock. Other factors tend to mitigate the extent of the discrepancy. Since end-2004, part of the real depreciation has been reversed following the combination of a stable nominal exchange rate and the high level of inflation in the first months of 2005. This suggests that the level of real effective exchange rate is broadly appropriate.

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CHAPTER II: APPENDIX I

Unit Root Tests

It is essential to determine the existence of a unit root test before estimating a long-run equation for the REER. If a variable is stationary, no long term co-movement can exist among the variables. Different types of tests were used to examine the unit root property. In addition to the standard ADF test, which has the unit root process as the null hypothesis and trend stationarity as the alternative hypothesis, the data was also subjected to (1) the Philips-Perron test, and (2) a unit root test that has trend stationarity as the null and the unit root process as the alternative, developed by Kwiatkowski, Phillips, Schmidt, and Shin (referred to as "KPSS").

Results are summarized in table 1 in which the three tests are applied on the series in level and first difference.

Chapter II. Table 1. Unit Root Tests

			Level		First Difference	
Variables	Test	H0	Test statistic	Critical values (5%)	Test statistic	Critical values (5%)
Log(reerq)	ADF (0)	**I(1)**	-1.530	-2.892	-9.180	-2.893
	PP	**I(1)**	-1.553	-2.892	-9.180	-2.893
	KPSS	I(0)	0.818	0.463	0.169	0.463
Log(produc_r)	ADF (4)	**I(1)**	-2.478	-2.901	-6.366	-2.899
	PP	**I(1)**	-2.289	-2.899	-6.483	-2.899
	KPSS	I(0)	1.176	0.463	0.414	0.463
Log(tot-weo)	ADF (8)	**I(1)**	-0.557	-2.895	-5.399	-2.895
	PP	**I(1)**	-2.196	-2.892	-8.109	-2.893
	KPSS	I(0)	0.560	0.463	0.172	0.463
Log(gexpgdp)	ADF (1)	I(1)	-3.341	-2.893	-7.404	-2.893
	PP	I(1)	-3.311	-2.892	-7.486	-2.893
	KPSS	**I(0)**	0.314	0.463	0.400	0.463
Log(resmon)	ADF (1)	I(1)	-3.161	-2.894	-4.255	-2.894
	PP	**I(1)**	-2.664	-2.892	-10.448	-2.893
	KPSS	**I(0)**	0.264	0.463	0.120	0.463
nfagdp	ADF (0)	**I(1)**	-1.103	-2.892	-10.530	-2.893
	PP	**I(1)**	-1.021	-2.892	-10.536	-2.893
	KPSS	I(0)	0.630	0.463	0.169	0.463

Summary note: all variables are found to have a unit root, except for government expenditure and reserve money, which are found to be stationary. The PP test found that reservemoney has a unit root, while ADF rejects the unit root hypothesis and the KPSS accepts the I(0) hypothesis.

The real effective exchange rate (REER) exhibits a nonstationary behavior (Figure 1), confirmed by all three tests. Shaded areas in Figure 1 represent period under a de facto fixed peg, periods where the real effective exchange rate was appreciating substantially. Between

the two episodes of fixed peg, the authorities implemented a crawling peg. In 1994, Madagascar switched to a floating exchange rate regime.

IV. Competitiveness and Export Performance in Madagascar[11]

A. Introduction

1. This section presents information on some competitiveness indicators other than the exchange rate and then provides a more detailed analysis of the evolution of Madagascar's exports in terms of the structure and performance of exports, at the aggregate and product levels. The role played by export processing zones (EPZs) and by special factors such as textile exports driven by the African Growth and Opportunity Act (AGOA) will be discussed, as well as the implications of the termination of the Agreement on Textiles and Clothing (ATC) in 2005 and the expected termination of the third party provision under AGOA (AGOA III) in 2007. Based on qualitative information gleaned from interviews with exporters in Madagascar and on survey questionnaire responses, this chapter will discuss some underlying factors, which will determine the impact of these shocks. The results of these questionnaires are summarized in an appendix.

2. To summarize, Madagascar's performance has been relatively weak with respect to some qualitative indicators, and the signals provided by micro-based indicators are mixed in that they indicate competitive wages but also relatively low productivity and high nonlabor costs for certain exports. The analysis of export performance indicates that the relatively strong aggregate export performance masks some vulnerabilities. Exports from Madagascar have indeed increased as a share of GDP from about 14 percent in 1991 to about 20 percent in 2004. Since 2000, the increase in nontraditional exports, especially from the EPZ which comprise mostly of manufacturing goods, has been significant. However, diversity in the value of products exported and in terms of partner countries appears to have declined, and exports have become more concentrated in a few sectors and products. Moreover, a large part of the strength appears to have been driven by changes in external trade policies such as the preferential trade treatments, including that with the United States. The possible termination of such treatment in the coming years presents some significant challenges as well as some opportunities for Madagascar.

B. Some Indicators of Competitiveness

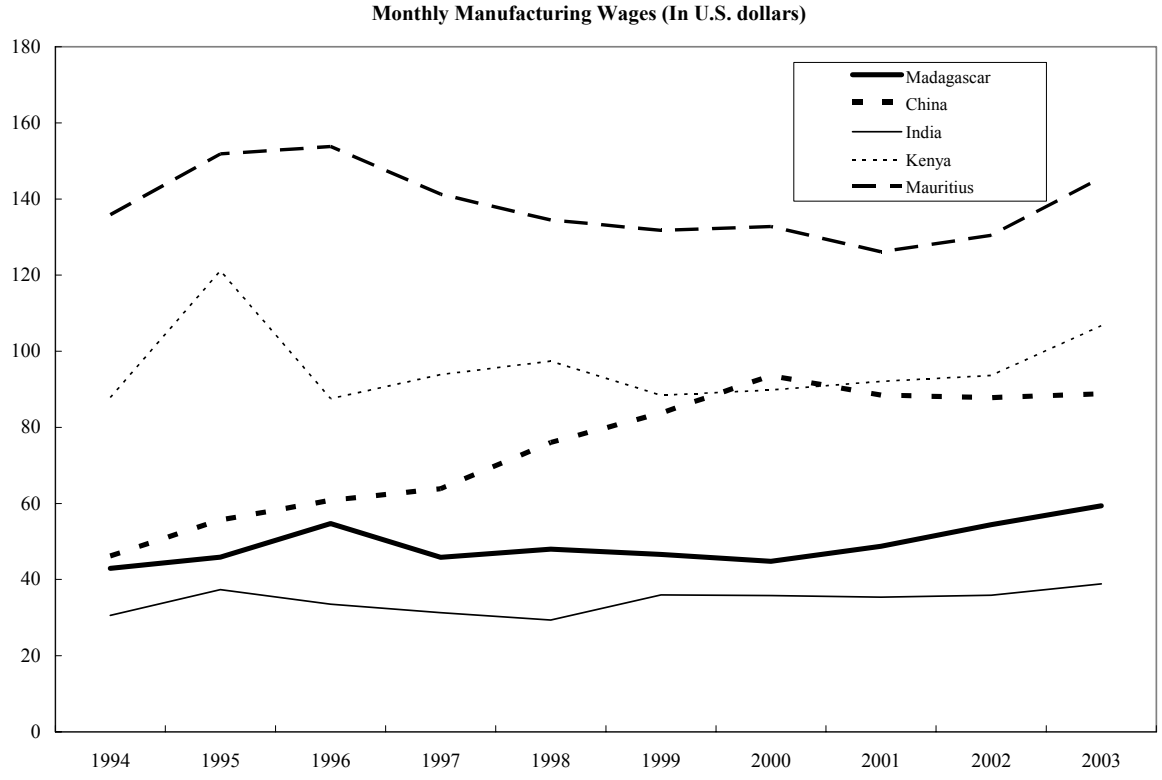
3. **External competitiveness has several facets that may not be adequately captured by the consumer price index (CPI)-based real effective exchange rate.** These variables include nominal wages, costs of doing business, including infrastructure costs, and the overall quality of the business environment. These are discussed further below.

4. **Competitiveness in Madagascar owing to low nominal wages is partly eroded by low productivity and high nonlabor costs.** Nominal wages are low in Madagascar relative to several low-income countries. International Labor Organization (ILO) data on wages for

[11] Prepared by Ritha Khemani.

example indicates that the average monthly wage in Madagascar is low relative to China, Kenya, and Mauritius (Figure 1).

Chapter III. Figure 1.



Sources: International Labor Organization data and staff estimates.

These are competitor countries for textile exports, but it is unclear if this advantage continues to prevail on a productivity adjusted basis. Aggregate productivity data are not available to examine this issue. Sector-specific information on productivity, wages, and nonwage costs provides useful insight. In this regard, in terms of the clothing sector (which now represents a significant share of Madagascar's exports, as will be shown below), nominal wages are low and competitive in Madagascar relative to several countries (Table 1). Wages in Madagascar, for example, are less than half those in China. However, the labor cost per shirt is not correspondingly lower, reflecting lower productivity (for example, as measured by the number of shirts per day produced by a worker) or the lower number of working hours per week. Moreover, nonwage costs are significantly higher and substantially reduce the competitive wage cost advantage. This suggests that Madagascar will face strong competition from exporting countries in the clothing and textiles sector in the near future.

Chapter III. Table 1. Some Wage and Non-Wage Competitiveness Indicators

	China	India	Kenya	Lesotho	Sri Lanka	Maurititius	Madagascar
Machine operator wage	$150	$75	$65	$95			$65
Labor cost per shirt	$0.29	$0.17	$0.18	$0.19			$0.16
Daily shirts productivity per worker	22	16	15	18			15
Working hrs per week			45	45		45	40
Shipping costs of clothes							
To Paris	$400				$675		$820
To New York	$1,000				$1,395		$1,350
Other logistic costs	$30				$40		$59
Order to arrival time	15 days				35 days		35 days
Shipping to arrival time	2 days				4 days		7 days
Shipping time to US			45 days		30 days	27 days	47 days
Electicity rates(per kwh)			0.1	0.07	0.05	0.05	0.09
Water rates			0.43		0.36	0.29	0.34
Industrial rents			2-3.3			1.8-2.2	3.5-11

Source: Cadot and Nasir (2001), Madagascar, Diagnostic Trade Integration Study

5. **Some qualitative indicators of Madagascar's competitiveness are not very positive.** While the real effective exchange rate is a sound measure of macroeconomic aspects of competitiveness, it does not capture some other critical elements of competitiveness are conducive to enhancing investment, exports, and economic growth. These include such factors as institutions, technology, rule of law, and corruption, which are important aspects of the cost of doing business. The Growth Competitiveness Index (GCI) and the Business Competitiveness Index (BCI) computed by the World Economic Forum capture some of these aspects that could have an importantlinfluence on foreign direct investment and associated exports.

6. **The World Economic Forum competitiveness report ranks Madagascar low in the GCI.** The Growth Competitiveness Index (Table 2) is composed of three pillars which are considered to be critical to economic growth: the quality of the macroeconomic environment, the state of the country's public institutions, and country's technological readiness.[12] Madagascar ranks lowest amongst its Comesa partners except for Ethiopia.

[12] With respect to the last component, the GCI economies are separated into two groups: core economies, for which technological innovation is critical, and noncore economies. Noncore economies are those that can still grow by adopting technology from abroad. Relatively less weight is given to technology in computing the GCI for these economies. In any event, some of the aspects of technology would already be embodied in real equilibrium exchange rate insofar as it is reflected in productivity.

Chapter III. Table 2. Growth Competitiveness Index (GCI) 2004
Comparison with Comesa Partners
(Among 104 countries)

	Technology Index	Public Institutions Index	Macroeconomic Environment Index
Egypt	65	70	57
Ethiopia	103	77	99
Kenya	72	75	86
Madagascar	**99**	**95**	**78**
Malawi	97	63	100
Mauritius	44	65	50
Nambia	66	40	62
Uganda	77	86	75
Zambia	90	66	95
Zimbabawe	86	73	104

Source: World Economic Forum

7. The Business Competitiveness Index (BCI) (Table 3) also published by the World Economic Forum serves as a complement to the more macroeconomic approach of the GCI. Here again Madagascar scores a poor ranking.[13]

[13] The BCI evaluates the underlying microeconomic conditions defining the current sustainable level of productivity in the country. It evaluates two specific areas : the sophistication of operating practices and strategies of companies and the quality of microeconomic business environment in the nation's companies compete. The underlying notion is that without these complements the macroeconomic qualities and potential defined in the GCI cannot be realized.

Chapter III. Table 3. Business Competitiveness Index (BCI) 2004
Comparison with Comesa Partners
(Among 104 countries)

	BCI Ranking	Company Operations & Strategy	Quality of Business Environment
Egypt	66	57	68
Ethiopia	99	101	97
Kenya	63	56	63
Madagascar	**87**	**88**	**88**
Malawi	84	83	85
Mauritius	53	49	54
Nambia	51	63	51
Uganda	71	75	69
Zambia	78	85	73
Zimbabawe	82	79	84

Source: World Economic Forum

C. Export Performance in Madagascar

8. **The performance of exports in aggregate has generally been strong.** Since 1990, aggregate exports have shown fairly robust growth, despite some disruptive factors associated with the exchange rate liberalization (1994) and the political crises (2002) (Table 4). As a percentage of GDP exports have increased since 1990 from around 14 percent to over 20 percent of GDP in 2004. At sector level, the strength in aggregate exports has been mainly driven by manufacturing sectors including the EPZ.

Chapter III. Table 4. Madagascar Structure of Exports 1/

	Average annual growth rates			Percent of total exports		
	1991-95	1996-2000	2001-04	1991	1995	2004
Merchandise exports	8.7	13.9	10.4	100.0	100.0	100.0
Of which,						
Traditional exports	7.9	3.2	30.0	30.0	28.3	18.6
Non-traditional Exports	16.1	23.5	22.2	46.0	49.3	70.5
Export processing Zone	68.1	31.4	46.7	8.5	20.2	50.2
Other (inc.reexports)	6.2	18.6	3.6	30.3	24.0	17.4

1/ Nominal exports measured in terms of SDRs.
Notes: Traditional exports are vanilla, cloves, pepper and coffee
Non-traditional exports: cotton cloth, pertroleum products, exports from EPZs and other.

9. **While growth in aggregate exports was strong, performance in traditional exports was uneven.** The reasons for the weak performance in traditional (agricultural)

exports particularly from 1996 to 2000 (Table 4), are not entirely clear. Some of the weaknesses in the growth of the value of traditional agricultural exports for the period as a whole may be due to the long term decline in many agricultural commodity prices (vanilla being an exception) that are exported from Madagascar but volumes have also been weak. The value of coffee exports was weak for much of this period reflecting weak world prices but could also reflect a volume response to long term decline in coffee prices. Exports of cloves were also weak. The high growth rates of over 30 percent registered in later years in traditional exports were in large part due to increases in the price of vanilla. The volume increases in vanilla were variable and reflecting volatile production conditions due to natural factors. Indeed for most of the period Madagascar was a major supplier of vanilla and viewed as a price maker in the world markets.

10. **Madagascar's exports have in large part been driven by manufacturing exports from the EPZs.** The strong growth in this sector is a positive sign of competitiveness but special factors were also at play (see below). In the initial years, the extremely high growth rates represented increases from a very small base when EPZ exports represented a small but growing share of total exports. The EPZ sector has continued to grow rapidly with important contributions from the garment sector, such that exports from EPZs now represents almost half of the value of total exports (Table 4).

11. **Export performance at the product level confirms the uneven performance at the sector level, and points to weak export performance of certain products**. Export performance in aggregate can often be better assessed by an examination of the products being exported. At the product level, the value of exports of many major products (shellfish, vanilla, nonmetallic minerals, and clothing and garments) in Madagascar grew robustly at over 10 percent on an annual average basis since 1990 (Table 5) and indeed exports of these products have been particularly strong since the mid-nineties despite the appreciating real effective exchange rate at that time. Exceptions have been the textiles and yarns category (which actually declined), crude materials, and to a lesser extent vegetables and fruits. Weaker performance in these categories, which include wood products, may have been due to supply constraints or structural factors. Note that domestic agricultural production was weak for much of the period. The decline in the exports of textiles and yarns could in part be attributed to increased domestic use of these products given the increase in clothing exports, although structural factors (viz. weak performance of state owned enterprises which manufactured and exported these products) may also have played a role.

Chapter III. Table 5. Selected Products : Export Performance
(In millions of U.S. dollars)

Prod. Code		1990	1995	2000	2003	Avg. Ann. Growth Rate
03	Fish/shellfish/etc.	40774.3	56686.2	123325.7	169593.2	11.6
05	Vegetables and fruit	14263.8	29888.7	19382.7	20180.9	2.7
07521	Vanilla	56958.2	34029.4	57929.5	188710.1	9.7
07524	Cloves, whole/clove/stem	19992.1	11269.9	45864.3	28822.0	2.9
2	Crude mater.ex food/fuel	34020.6	45511.7	42721.5	37679.3	0.8
65	Textile yarn/fabric/art.	13333.2	17849.4	96013.0	10136.4	-2.1
66	Non-metal mineral manuf.	3975.4	4175.7	17422.2	14234.4	10.3
84	Apparel/clothing/access	6695.0	5115.9	308584.6	236061.5	31.5
	Sub-total	190012.6	204527.1	711243.5	705417.8	
	Total exports	292422.7	350420.9	817262.0	766015.5	

Source: COMTRADE

12. **A result of these developments is greater concentration in the value of exports, particularly in clothing**. It is clear that increases in clothing have been driving aggregate exports and this product now accounts for a significant share of the exports. On the other hand, fruits and vegetables, textiles and yarns, crude materials and nonmetallic mineral products which represented more than 20 percent of total exports in 1990, currently accounts only for a little over 10 percent of total exports (Table 6).

Chapter III. Table 6. Exports of Selected Products

		1990		1995		2000		2003	
Prod. Code		A	B	A	B	A	B	A	B
03	Fish/shellfish/etc.	13.9	21.5	16.2	27.7	15.1	17.3	22.1	24.0
05	Vegetables and fruit	4.9	7.5	8.5	14.6	2.4	2.7	2.6	2.9
07521	Vanilla	19.5	30.0	9.7	16.6	7.1	8.1	24.6	26.8
07524	Cloves, whole/clove/stem	6.8	10.5	3.2	5.5	5.6	6.4	3.8	4.1
2	Crude mater.ex food/fuel	11.6	17.9	13.0	22.3	5.2	6.0	4.9	5.3
65	Textile yarn/fabric/art.	4.6	7.0	5.1	8.7	11.7	13.5	1.3	1.4
66	Non-metal mineral manuf.	1.4	2.1	1.2	2.0	2.1	2.4	1.9	2.0
84	Apparel/clothing/access	2.3	3.5	1.5	2.5	37.8	43.4	30.8	33.5
	Total	**65.0**	**100.0**	**58.4**	**100.0**	**87.0**	**100.0**	92.1	100.0

Source: Comtrade
A=share of total exports
B=share of the selected exports

13. **The share of exports to a few partner countries has remained high (**Tables 7 and 8). The tables below present the major export products noted above classified by importing countries for the years 2003 and 1990. In 2003, the United States and France accounted for about 68 percent of Madagascar's exports in the selected products, while these countries accounted for less than 50 percent of the same products in 1990. This shift may in part reflect

shifts in demand conditions in partner countries. For example, exporters of shrimps indicate that the shift of shrimp exports to Europe (France in particular) reflected in part higher demand in France for the special variety of shrimps exports from Madagascar. Another important reason for the increased partner country concentration is the spectacular increase in the exports of garments to the United States.

Chapter III. Table 7. Madagascar: Geographical Distribution of Exports 2003
(In percent of relevant export category)

Prod. Code		USA	France	Germany	Japan	U.K.	Singapore	Mauritius	S.Africa	Thailand	Belgium	other	World
03	Fish/shellfish/etc.	0.0	77.2	3.8	6.1	1.0	0.1	2.2	0.1	1.4	0.1	2.5	100.0
07521	Vanilla	48.6	28.7	2.8	1.1	2.3	2.2	0.0	1.1	0.0	0.1	6.5	100.0
07524	Cloves, whole/clove/stem	3.7	2.1	1.2	0.0	0.3	69.0	0.3	0.6	0.0	0.0	20.7	100.0
2	Crude mater.ex food/fuel	4.0	18.1	7.7	0.5	4.9	0.2	7.3	1.8	0.0	6.1	46.1	100.0
65	Textile yarn/fabric	0.2	20.5	2.4	0.0	0.7	0.0	6.2	0.7	0.0	1.5	67.4	100.0
66	Non-metal mineral manuf.	7.7	11.9	4.8	0.4	2.1	0.1	4.2	0.7	43.1	0.3	22.8	100.0
84	Apparel/clothing/accessories	51.2	25.9	8.7	0.1	2.8	0.0	0.4	5.1	0.0	0.5	3.3	100.0
	Share of importing country	30.7	38.7	5.3	1.5	2.1	3.4	1.3	2.2	1.2	0.7	8.7	

Source : COMTRADE

Chapter III. Table 8. Madagascar: Geographical Distribution of Exports 1990.
(In percent of relevent export category)

Prod. Code		U.S.A.	France	Germany	Japan	U.K.	Singapore	Mauritius	S.Africa	Thailand	Belgium	other	World
03		0.0	46.9	0.0	35.6	0.0	1.2	1.8	0.5	0.0	0.0	13.5	100.0
05	Vegetables and fruit	0.0	51.8	1.8	0.0	2.7	0.0	6.2	0.1	0.0	0.0	31.8	100.0
07521	Vanilla	69.2	6.5	18.8	5.3	0.0	0.0	0.0	0.0	0.0	0.0	0.1	100.0
07524	Cloves, whole/clove/stem	1.4	5.0	1.7	0.0	0.3	85.4	0.0	0.0	0.0	0.0	3.3	100.0
2	Crude mater.ex food/fuel	7.7	34.2	4.8	5.2	5.4	0.8	0.9	0.0	0.0	0.0	36.6	100.0
65	Textile yarn/fabric/art.	2.2	12.4	28.1	0.0	8.8	0.0	14.1	0.0	0.0	0.0	33.9	100.0
66	Non-metal mineral manuf.	2.8	5.4	40.6	5.1	1.6	0.1	0.2	0.1	0.1	0.0	13.0	100.0
84	Apparel/clothing/access	1.5	65.2	8.4	0.0	3.5	0.0	1.4	0.0	0.0	0.0	19.4	100.0
	Share of importing country	22.5	25.8	9.9	10.3	2.0	9.4	2.1	0.1	0.0	0.0	15.6	

Source : COMTRADE

14. **Exports of traditional agricultural products have been relatively weak.** Madagascar has gained market share in one product category (i.e., shrimp), but lost market share in terms of its more traditional exports. Madagascar has lost world market share in cloves and, to a lesser extent, in vanilla. Some of the latter may have been due to a switch to lower-quality vanilla by the final consumer and purchasers of vanilla. On the other hand, Madagascar has gained a significant market share in shellfish especially in OECD markets (Table 9).

Chapter III. Table 9. World Market Shares (vanilla, cloves, shellfish)

	Vanilla				Cloves				Shellfish		
	1995	2000	2003		1995	2000	2003		1995	2000	2003
World imports	100.0	100.0	100.0	World imports	100.0	100.0	100.0	OECD imports	100.0	100.0	100.0
o/w Madagascar	53.8	60.2	53.5	o/w Madagascar	57.0	66.0	39.5	o/w Madagascar	9.6	17.7	20.1
o/w Indonesia	14.4	8.2	19.7	o/w Indonesia	1.1	5.8	24.4	o/w Mozambique	10.0	13.9	9.0
o/w Uganda	5.8	2.6	0.1	o/w Tanzania	12.2	8.1	9.2	o/w Mauritania	29.3	17.1	19.0
o/w Comoros	5.2	7.0	4.2	o/w Comoros	1.9	3.9	4.3	o/w Senegal	10.3	12.5	15.6

Source: COMTRADE

15. **Despite increasing concentration in garments, Madagascar's export base continues to be diverse.** Measures of concentration, for example, a Herfindahl-Hirschman index confirms that there has been an increase in concentration in terms of products and country partners, but also that there is diversity in terms of the export base.[14] Diversity is also indicated in terms of the *number o*f products exported and this presents a good base for future growth. For example, the number of products exported from Madagascar has remained large and stable (Table 10). To illustrate, there have been no major changes with respect to the number of products exported (measured at the 3 digit SITC product classification level for those which are greater than US$1 million). At this level of classification, the number of types of products exported has ranged between 25 to 33 over the years with no sharp declines over the period (see Table 10). The product base also remains relatively dynamic. Some products such as live animals are no longer exported but new industries and exports have developed, e.g., watches.

16. **The above developments, that is, increased concentration of products in garments within a broad and diverse export base, present challenges and opportunities.** The export base has remained diverse but export performance has been uneven due to weak performance in some sectors with spectacular performance in others, particularly in garments. Consequently, exports in terms of value have become concentrated with a high share of garment exports. This is not in itself an adverse development. To the extent export growth of the high growth sector is sustainable, it points to specialization and a move towards areas of comparative advantage reflecting the underlying competitive conditions for Madagascar's exports. However, it poses risks when the increases in exports are due in part to preferential arrangements of partner countries, especially when such arrangements are due to expire, as well as when they are due in part to domestic preferential tax treatments as evidenced by EPZs. These aspects of Madagascar's export growth in the context of EPZs and regional preferential trading arrangements are examined below.

[14] A calculation of the Herfindahl-Hirshman concentration index based on Tables 7 and 8 above shows that product and partner country level concentration has increased from .19 and .17 respectively in 1990 to .25 and .26 respectively in 2003. The estimated level of the index is substantially below 1 and suggests diversity of the export product base.

17. **EPZs show a wide range of products, but textiles and clothing have been dominant.** EPZs were introduced on the basis of a special regime in 1990 following the decision to encourage an export-led strategy.[15] Exports from EPZs currently represent about 50 percent of total exports. A vast majority of the EPZ firms from the start of the EPZ regime have been concentrated in textiles, in terms of the number of firms, investment and employment (Table 11). As at end-2004, more than half the firms operating in the EPZs and accounting for about 80 percent of the employment were in the clothing and textile sector.

Chapter III. Table 11. Enterprises Operating in EPZs

	Total as of 2004		Share		
Sectors	**Number**	**Employment**	**Number**	**Employment**	**Investment** (In mill.fmg)
Agro-food industry	6		3.4		15.3
Garments	102	91,540	58.0	79.6	66.2
Leather products	2		1.1		1
Wood products	3		1.7		2.6
Information services	12		6.8		1.7
Aquaculture	6		3.4		2.2
Mining products	3		1.7		1.9
Handicrafts	7		4.0		0.9
Textile related products	20	460	11.4	0.4	0.9
Other	15		8.5		5.1
SOUS-TOTAL	176	115,000	100	100	100

Source: Export Processing Zones Association and Partners.

[15]The EPZ regime is limited to specific sectors; however, firms registered under this regime are under no obligation to locate in specific zones. They must intend to export at least 95 percent of their output. Export processing zones are exempt from all customs duties and excise taxes on import of investment and intermediate consumption goods, but are subject to VAT, which can be refunded against proof of export, and to wage taxes. Registration under the EPZ regime offers a grace period on profit taxes of two to 15 years, depending on the type of activity. At the end of the grace period, profits are taxed at 10 percent, lower than the 30 percent applicable to common law firms. EPZ firms also benefit from a reduced tax rate on dividends

Chapter III. Table 10. Product Diversification in Madagascar
(Products with exports greater than US$1 million)

	2003			2000			1995			1990		
	SITC											
	001			1	Live animals except fish	2047.3	1	Live animals except fish	1120.8	1	Live animals except fish	2847.4
	011						2	Beef, fresh/chilld/frozn	8809.0			
1	034	Fish,live/frsh/chld/froz	1905.5	2	Fish,live/frsh/chld/froz	3689.4						
2	036	Crustaceans molluscs etc	125931.3	3	Crustaceans molluscs etc	98198.5	3	Crustaceans molluscs etc	55046.2	2	Crustaceans molluscs etc	39387.9
3	037	Fish/shellfish,prep/pres	41518.5	4	Fish/shellfish,prep/pres	20482.8						
	04						4	Cereals/cereal preparatn	1291.5	3	Cereals/cereal preparatn	4651.5
4	054	Vegetables,frsh/chld/frz	7519.2	5	Vegetables,frsh/chld/frz	3801.5	5	Vegetables,frsh/chld/frz	9058.7	4	Vegetables,frsh/chld/frz	6311.6
5	056	Veg root/tuber prep/pres	1143.8	6	Veg root/tuber prep/pres	1131.7	6	Veg root/tuber prep/pres	1879.5			
6	057	Fruit/nuts, fresh/dried	2009.9	7	Fruit/nuts, fresh/dried	2124.9	7	Fruit/nuts, fresh/dried	9103.5	5	Fruit/nuts, fresh/dried	4345.3
7	058	Fruit presvd/fruit preps	9501.3	8	Fruit presvd/fruit preps	12294.0	8	Fruit presvd/fruit preps	9832.3	6	Fruit presvd/fruit preps	3438.9
8	061	Sugar/mollasses/honey	2836.8	9	Sugar/mollasses/honey	6463.9	9	Sugar/mollasses/honey	9097.9	7	Sugar/mollasses/honey	20677.4
9	071	Coffee/coffee substitute	4128.2	10	Sugar/mollasses/honey	6463.9	10	Coffee/coffee substitute	82785.6	8	Coffee/coffee substitute	38896.0
10	072	Cocoa	6386.5	11	Cocoa	3417.5	11	Cocoa	2897.5	9	Cocoa	2449.3
11	075	Spices	219680.7	12	Spices	105548.3	12	Spices	48851.3	10	Spices	79887.1
										11	Beverages	6292.1
12	21	Hide/skin/fur, raw	4116.2	13	Hide/skin/fur, raw	2229.4	13	Hide/skin/fur, raw	1844.3			
13	24	Cork and wood	4680.8	14	Cork and wood	7937.4	14	Cork and wood	3167.9	12	Cork and wood	1304.2
14	26	Textile fibres	7381.3	15	Textile fibres	6264.1	15	Textile fibres	6367.4	13	Textile fibres	5217.5
15	27	Crude fertilizer/mineral	7790.4	16	Crude fertilizer/mineral	7295.3	16	Crude fertilizer/mineral	11579.2	14	Crude fertilizer/mineral	17437.5
16	28	Metal ores/metal scrap	2005.7	17	Metal ores/metal scrap	7189.7	17	Metal ores/metal scrap	12720.7	15	Metal ores/metal scrap	4970.4
17	29	Crude anim/veg mater nes	11338.4	18	Crude anim/veg mater nes	11609.8	18	Crude anim/veg mater nes	9643.6	16	Crude anim/veg mater nes	4033.1
18	33	Petroleum and products	2703.8	19	Petroleum and products	26920.2	19	Petroleum and products	5204.7	17	Petroleum and products	1503.3
19	55	Perfume/cosmetic/cleansr	6940.2	20	Perfume/cosmetic/cleansr	6538.6	20	Perfume/cosmetic/cleansr	7276.5	18	Perfume/cosmetic/cleansr	3774.1
	58			21	Plastics non-primry form	1829.1						
	61			22	Leather manufactures	1222.8	21	Leather manufactures	1274.8	19	Leather manufactures	1725.1
20	63	Cork/wood manufactures	1418.7	23	Cork/wood manufactures	1619.1	22	Cork/wood manufactures	2326.9			
21	64	Paper/paperboard/article	2205.8	24	Paper/paperboard/article	2997.9						
22	65	Textile yarn/fabric/art.	10136.4	25	Textile yarn/fabric/art.	96013.0	23	Textile yarn/fabric/art.	17849.4	20	Textile yarn/fabric/art.	13333.2
23	66	Non-metal mineral manuf.	14234.4	26	Non-metal mineral manuf.	17422.2	24	Non-metal mineral manuf.	4175.7	21	Non-metal mineral manuf.	3975.4
24	68	Non-ferrous metals	1586.7									
25	74	Industrial equipment nes	1030.9									
	75			27	Office/dat proc machines	2510.1				22	Office/dat proc machines	1031.4
	77			28	Electrical equipment	1931.8						
26	84	Apparel/clothing/access	236061.5	29	Apparel/clothing/access	308584.6	25	Apparel/clothing/access	5115.9	23	Apparel/clothing/access	6695.0
	87			30	Scientific/etc instrumnt	1502.0						
27	88	Photographic equ/clocks	5472.2	31	Photographic equ/clocks	3921.0						
28	89	Misc manufactures nes	10732.5	32	Misc manufactures nes	25946.8	26	Misc manufactures nes	7367.8	24	Misc manufactures nes	4419.7
29	9	Commodities nes	4104.3	**33**	UN Special Code	1935.4	**27**	UN Special Code	6030.6	**25**	UN Special Code	2332.8

Source: COMTRADE

18. **Despite a favorable tax treatment, products other than textiles and shellfish have not shown sustained or strong growth in the EPZ sector.** While EPZs operate in a wide range of products, growth of exports in the EPZ sector has been concentrated in shellfish, and in textiles and clothing. A range of other products are exported from this sector but they continue to be small in total values. Some of these sectors are itemized in the table below (Table 12). The products other than those itemized (shown as "other" in Table 12 below) represent a range of exported products exported often in very small quantities. In addition to some sectors indicated in the table, the "other" sector comprises of sectors that have been highly variable with no sustained export performance. In the absence of any systematic pattern across time, it is not clear whether this development is related to exchange rate competitiveness or some other structural factors.

Chapter III. Table 12. Exports from the Export Processing Zones (EPZs) : By Product
(By Product)

Products	Value in Billions of FMG					Share of total EPZ exports					
	1995	1997	2000	2001	2002	1995	1997	1999	2000	2001	2002
Shell fish	45.4	21.7	14.2	251.6	386.6	9.7	3.2	0.7	0.5	10.3	23.9
Other meat and fish	121	41.7	137.7	184.3	194.7	25.9	6.1	9.7	4.6	7.5	12
Cotton	0.3	15.7	143.3	5.3	10.2	0.1	2.3	4.3	4.8	0.2	0.6
Clothing	144.5	199	1,099.80	881.9	324.1	30.9	29	31.9	36.9	36	20
Other clothing	124.5	208.6	889.5	940.5	431	26.7	30.4	35.7	29.9	38.3	26.7
Other textile articles	1.6	3.1	8.4	8.9	4.4	0.3	0.5	0.5	0.3	0.4	0.3
Footwear	0.8	1.5	0.7	0.2	0.2	0.2	0.2	0.1	0	0	0
Electrical products	0	0.6	11.3	12.7	3.3	0	0.1	0.3	0.4	0.5	0.2
Photographic items lens etc	3.4	4.8	15	13	8.4	0.7	0.7	0.6	0.5	0.5	0.50
Watches and clocks	8.5	8.5	20.1	28.4	39.1	1.8	1.2	0.6	0.7	1.2	2.4
Toys and sporting goods	7.1	6.3	17.8	13.7	48.2	1.5	0.9	0.8	0.6	0.6	3
Other	6.4	173.1	608.5	108.2	108	1.4	25.3	14.4	20.5	4.4	6.9
TOTAL	463.5	684.7	2,966.20	2,448.70	1,558.20	99.2	99.6	99.6	99.6	99.8	96.4

Source: INSTAT

19. Textiles and clothing, which were from the start in the early 1990s a significant share of the EPZ exports almost doubled in value in 2000 and growth has continued since then, except for the sharp drop in 2002 due to the political crises. This jump in 2000 was most likely related to partial relocation of the activities of textile firms from quota restricted countries and was buttressed in later years by the special features of AGOA. These aspects or special factors which facilitated the growth of exports are examined further below.

Textiles exports and preferential treatment

20. **Madagascar enjoys a number of preferential treatment agreements.** With respect to Europe it is a beneficiary of the Cotonou Agreement and is currently also eligible for EU's Everything but Arms Initiative launched in 2001. Madagascar was declared AGOA eligible in October 2000 and was declared eligible for the apparel provision in March 2001, and it is eligible for the "third party fabric provision" (AGOA III) under which exports of garments made from imported fabrics from any country to the United States get preferred status.

21. **Madagascar was quick to take advantage of the AGOA provisions.** The garment industry took off in 2000 and became the second largest AGOA exporter after Lesotho.

Madagascar's utilization rate of the AGOA provisions was fast. However it suffered a major setback in 2002 when exports declined due to the political crises. In 2003, Madagascar appears to gained some ground and regained market share. Madagascar's market share of AGOA exports even as at November 2004 was still under the peak in 2001 (Table 13). The quick recovery is a positive development and consistent with the earlier indicators that point to Madagascar's competitiveness.[16]

Chapter III. Table 13. AGOA Imports
(In millions of U.S. dollars)

	2001	2002	2003	YTD to Nov 03	YTD to Nov 04
Total	954.1	1108.5	1504.5	1379.8	1597.7
Total under "third party provision"	264.4	596.0	914.3	827.2	1199.0
Of which , (percent share)					
Kenya	19.3	20.3	19.3	19.2	12.3
Madagascar	27.2	11.6	18.8	18.4	22.1
Lesotho	49.2	53.2	40.8	41.4	34.3

Source: United States Commerce Dept. website on AGOA Trade Statistics

22. **The success story with respect to garment exports under AGOA coexists with an element of vulnerability.** A very high proportion of clothing and garments exports to the United States is under AGOA and under the third party provision which is due to expire in 2007 (Table 14).

Chapter III. Table 14. United States: Clothing Imports from Madagascar
(In millions of U.S. dollars)

	1990	1992	1995	2000	2001	2002	2003
Total	0.4	0.3	7.3	115.7	188.7	97.3	212.1
Of which,							
AGOA					178.1	89.4	196.0
Third Party Provision					72	69	172

Source: COMTRADE, United States Commerce Dept. website on AGOA Trade Statistics

23. The high share of AGOA exports of garments under the third party provision has the potential of substantial negative impact on exports due to the upcoming AGOA III shock i.e., when the third party provision is expected to terminate in 2007. The extent of the impact of

[16] Exporters that were interviewed emphasized that loss of customers in the garment industry was a serious setback as it eroded buyer confidence which could take a long time to recover.

the termination of this provision will depend on whether the industry can continue to export at a competitive price when the garments made with fabric imported from any country will not longer qualify for preferential treatment. The negative impact would of course be mitigated if the companies switch to and are successful in exporting without the benefit of this provision. This would be a challenge without significant productivity enhancements and reductions in costs, particularly nonwage costs. The impact will also depend on the extent of backward integration that can be quickly developed in the sector. This is because under AGOA I, which continues until 2015, the preferential treatment will extend to exports of clothing that use yarn or fabric produced domestically or in the Sub-Saharan African (SSA) countries.

24. **Interviews with exporters presented a mixed picture**. A few indicated that they would continue to export using regional fabric but more have noted that they cannot be competitive as regional fabric costs are higher and the lead times are long for obtaining regional fabric, which is in short supply. The extent of the impact would also depend on the ability of Madagascar firms to switch to new higher value added or niche markets in terms of garments and also the ability to switch to other markets such as in Europe. With respect to the latter, exporters were of the view that, while they do have a niche market in terms of some value added products, they also face strong competition from low cost exporters, particularly China (See Appendix I).

25. **It is also noteworthy that despite the preferential treatment accorded to Madagascar and that continues under the Cotonou Agreement, exports to Europe have been decelerating.** Part of this deceleration could reflect the loss of markets due to the termination of the ATC. Indeed, the deceleration in exports has been occurring since 2001, the year that marks the beginning of the Phase III of theATC, when quotas were being gradually removed (Table 15).

Chapter III. Table 15. OECD Country Imports of Clothing from Madagascar
(In thousands of U.S. dollars)

	1995	1998	1999	2000	2001	2002	2003
Total	113652.8	234120.4	291310.5	366933.5	440736.2	233684.0	361307.1
Of which,							
Belgium			14854.8	15585.7	17079.5	5774.9	3880.6
(Share of tot. imports)			5.1	4.2	3.9	2.5	1.1
Canada	66.3	884.3	773.4	966.1	2343.9	909.2	2553.7
(Share)	0.1	0.4	0.3	0.3	0.5	0.4	0.7
Switz.	71.3	380.6	435.9	626.4	814.4	628.8	733.0
(Share)	0.1	0.2	0.1	0.2	0.2	0.3	0.2
France	66989.6	128889.3	129828.3	131178.7	127746.6	79351.1	82314.5
(Share)	58.9	55.1	44.6	35.7	29.0	34.0	22.8
U.K.	3604.7	17325.2	21046.3	15121.8	22342.3	11927.4	12105.4
(Share)	3.2	7.4	7.2	4.1	5.1	5.1	3.4
Germany	14511.0	21810.0	28688.3	33772.5	30580.4	10244.1	27771.0
(Share)	12.8	9.3	9.8	9.2	6.9	4.4	7.7
Japan	20.6	620.3	691.1	1239.0	2086.1	968.9	1251.0
(Share)	0.0	0.3	0.2	0.3	0.5	0.4	0.3
Norway	31.9	294.2	414.0	711.4	1478.0	861.5	214.6
(Share)	0.0	0.1	0.1	0.2	0.3	0.4	0.1
Sweden	357.9	1237.1	2147.1	2734.6	3545.5	2087.2	98.3
(Share)	0.3	0.5	0.7	0.7	0.8	0.9	0.0
USA	7260.1	24131.6	49071.3	115739.3	188655.9	97292.2	212084.4
(Share)	6.4	10.3	16.8	31.5	42.8	41.6	58.7

Source: COMTRADE

26. **The extent of the ATC shock is particularly difficult to quantify for Madagascar because of the impact of the 2002 political crisis**. Madagascar is vulnerable to the expiry of the ATC given that about 87 percent of its clothing exports have been to the restricted markets. Industry surveys indicate that several African countries, including Madagascar, will experience a decline in exports to the U.S. and the EU. While Madagascar is competitive in terms of wages, it is disadvantaged in terms of other indicators such as transportation costs. In the textile market, factors such as speed of delivery are increasing in importance. More precise quantification of the impact for Madagascar is difficult but the weak performance in several EU countries noted above could be an indication of the impact of the expiry of the ATC. However, a complicating factor in assessing the ATC impact in Madagascar is the political crisis in 2002 which resulted in a drop in production. Industry experts have noted that several large buyers left Madagascar at this time and have yet to return. Thus, it would not be appropriate to attribute the entire deceleration or even a large part of the deceleration between 2001 and 2003 to the ATC shock and as being all due to lower competitiveness.

Indeed, in 2003 exports picked up outside the United States and even in nonquota constrained countries such as Japan.

27. **Although textile exports remained strong in 2004, preliminary data suggests that the weakness in Europe has continued in 2004**. While detailed information by importing country is not available for 2004, preliminary data suggest that garment exports have registered strong growth particularly to the United States. Many exporters that participated in the staff survey and in interviews (see Appendix for summary of results), noted that exports were strong in 2004. They noted that 2005 and 2006 would be more indicative of the effects of the termination of the ATC and the AGOA third party provision termination, respectively.

28. **Interviews with exporters and the results of a small sample survey show optimism in the near term, but longer term prospects are uncertain (appendix attached)**. Staff conducted interviews and a survey based on a questionnaire with a number of exporters of garments and textiles. The purpose was to gauge the view of the industry on the impact of the ATC termination and the upcoming termination of AGOA III. Another objective was to gain a better understanding of the obstacles for future export growth. Based on orders received in the first half of 2005, a little under half of the companies expected sales in 2005 to be higher than in 2004. On the whole, exporters did not expect a sharp decline in exports of clothing in 2005 but were less optimistic about the following years as the competition from low cost producers intensifies and the termination of AGOA III comes into effect. Exporters were concerned that the Madagascar's competitiveness due to low wages was being eroded due to increasing nonwage costs. In this regard, they cited infrastructure, communication, and electricity costs as factors which limit competitiveness.

D. Concluding Comments

29. **Madagascar's strong export performance to date has become vulnerable.** Madagascar's export performance has been strong, particularly since 2000 and although the export base continues to be diverse in terms of the number of different products exported, the value of exports has become more concentrated over time, in terms of partner countries and products. Exports of clothing to the United States, particularly under AGOA III, now represent a fairly large share of total exports. At the same time, there are indications that Madagascar's exports especially to Europe and France in particular (Madagascar's largest market in Europe) are being impacted by termination of the ATC. Against this background, policy measures assume greater importance and a judicious mix of macroeconomic and structural policies will be key. In the near term, short term impediments to exports that increase costs, such as delays in customs clearance procedures, could be removed. Moreover, market participants in the clothing industry could also lay the ground work for mitigating the impact of the termination of AGOA III in 2007. AGOA III was intended to provide space for the SSA countries to develop a better backward and forward integration of the industry to increase efficiency and competitiveness of the sector. Finally, while the recent exchange rate depreciation in 2004 has improved competitiveness significantly, the authorities need to be more cognizant that this could be eroded in Madagascar by high nonwage costs and because

of weak institutions. Creating an environment that favors investment will be key. Reforms will need to be geared towards improving governance and transparency of institutions.

CHAPTER III. APPENDIX I: RESULTS OF THE SURVEY ON EXPORT PROCESSING ZONES (EPZS) ON THE OUTLOOK FOR GARMENT EXPORTS

Staff conducted interviews and a survey based on a questionnaire with a number of exporters of garments and textiles[17]. This appendix summarizes the results of these interviews and survey responses. This approach was used to better understand the current market conditions in the garment sector and to the main obstacles for its improved performance. The findings are based on responses from 20 companies that represent about 40 percent of total employment.

The textile market has a relatively long history in Madagascar. First, it is made up of a number of firms which have been operating in the industry before the emergence of special trade treatments such as AGOA; second, the industry is fairly diversified in both the U.S. and the European markets and third, its exports comprise basic garments and knitwear as well as exports, albeit limited, of somewhat higher value added items and some exports to "niche" markets, particularly to Europe. The survey covered companies in all of these sectors and included large (more than 1,000 employees), medium sized companies (between 500 and 1,000 employees) and smaller companies with less than 500 employees.

Sales and orders: 2004, 2005, and longer term

Almost all of the respondents reported that sales in 2004 were higher than in the earlier year, a result which is line with the preliminary data for the sector based on the latest customs data. Some of the respondents noted that this was mostly due to good performance in the first half of 2004. In any event, the good sales performance in 2004 is encouraging, as it represents a period in which the effect of the termination of the Agreement on Textiles and Clothing (ATC) would have impacted the sector. This suggests that, notwithstanding the effects of the termination of the ATC, exporters were continuing to, at least in part, hold on to their market share.

Based on orders received in the first half of 2005, a little under half of the companies expected sales in 2005 to be higher than in 2004. Most of the others indicated that they did not expect the strong performance of 2004 to continue and that sales would be flat, and a few expected sales to be lower. There is indication of a further slowing that is yet to come, as most exporters expected the competition due to the lifting of quotas (i.e., the termination of the ATC) to intensify in the coming years.

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[17] The survey was undertaken with respect to the members of the GEFP (Groupement des Enterprises Franches et Partenaires). Most, but not all enterprises of the Exports Processing Zones are members of the GEFP.

Indeed, the general slowing in the market is underscored by the fact that the majority of respondents (*including* those that were experiencing higher sales orders) were operating at less than full capacity. Some large companies that specialized in large volumes of basic garments noted that they need high capacity utilization ("about 85 percent") to remain profitable. A risk therefore exists that if orders do not pick up, there may be no growth or very modest growth in the EPZ garment sector for 2005 as a whole and under these circumstances, some firms may have to exit the industry. Interestingly, most of those that had expectations for higher sales for 2005 were more diversified in terms of operating in both Europe and the U.S. or had established strategies to diversify into the European markets.

The market structure in Madagascar with a number of firms exporting to both Europe and the U.S. and some firms exporting into niche and somewhat higher end-markets may serve to mitigates the extent of the ATC shock in the near term and result in the adjustments being a more drawn out process. There was no noticeable difference between the nature of the responses between large and medium size firms with respect to sales expectations for 2005.

The actual and expected loss in orders to date was attributed by most respondents to China. Whether this is based on fact or perception is unclear, but most probably this is based on the number of bids for orders which were lost to China.[18]. Bangladesh, India, and Vietnam were also mentioned albeit less frequently. One exporter noted a loss of market to Lesotho, which has been specializing in jeans and increasingly relying on domestic content due to some investment from Taiwanese firms. This could reduce lead times considerably a valuable feature for product market competitiveness.

China was the supplier of raw materials to a majority of firms and the sole supplier to a few respondents which were operating only under the AGOA regime. Apart from these firms, the supply of raw material was drawn from Mauritius, other Asian countries (India) and domestic sources. That some firms operate at least in part using domestic textiles is encouraging. This would allow firms to continue to export to the US under the original AGOA which will continue until 2015 and which allows the use of regional or domestic fabric. On the other hand, AGOA III, under which the fabric can be supplied by any country, expires in 2007. One producer who exports only to the U.S. under AGOA III has indicated its intention to continue production along these lines although concerns were expressed about the quality and cost of domestic textiles and the lead time taken by the few domestic firms to deliver the raw material.

Almost all of the respondents were not very optimistic about sales beyond 2005 and in the medium term.

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[18] Buyers usually call for bids on certain orders and quote a target price. Exporters in winning or losing the bid become cognizant of the price and other non-price competition. There is also buyer feedback from which exporters derive information on the competition.

Factors for locating in Madagascar

Low wages and the availability of tax exemptions were cited most frequently as factors for locating in Madagascar. Interestingly, lack of external demand was cited very frequently as an obstacle to immediate growth in exports. Other factors noted as obstacles to higher export performance were infrastructure costs, communication and electricity costs, and exchange rate volatility. The closing down of tax exemptions for EPZs was cited as the most important factor which would trigger relocation.

Other information

Textiles and clothing represent a price sensitive and highly competitive sector, although there is room for some niche and high quality markets which are less price sensitive. But in the current conjuncture, respondents noted that price competition was fierce and that all buyers were becoming very sensitive to prices. Madagascar is competitive in terms of wages and the quality of labor is also good or easily trained. But exporters noted that labor laws (that are more stringent relative to other countries including China) regarding the number of hours that workers can work without overtime pay, cuts into the wage competitiveness. Other costs were also going up and reaching the point where they erode the wage competitiveness. These were rents, electricity, port charges, and other "hidden costs". The quality of service with respect to electricity and port and transportation was also cited as being poor. In the last year, these factors and weak prices for output had cut into profits of firms, making their continued operations vulnerable. In terms of relative competitiveness, costs could on the whole be lower in China mainly because of lower non-wage costs.

Respondents were mixed about the prospects beyond 2007 when AGOA III terminates. One large firm said that the large firms could "survive" the termination of ATC impact, but not the expiry of AGOA III as many companies located plants to Madagascar precisely to take advantage of this provision. On the other hand, one other large firm noted its intention to continue after AGOA III, using regional or domestic fabric. It is unclear however whether the supply of regional and domestic fabric will be adequate or cost effective.

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(General Tax Code)

Including the 2005 Budget

Tax	Type of Tax	Deductions and Exemptions	Tax Rate	Tax Reporting
TAX ON INCOME AND PROFITS Corporate profit tax (IBS) [*Impôt sur les bénéfices des Sociétés*—IBS] (General Budget)	Article 01.01.02 Annual tax on the full range of profits earned by companies headquartered in Madagascar, as well as income generated by the possession of assets or the practice of a gainful activity in Madagascar.	Article 01.01.03 • Income earned by partnerships, religious missions and churches, or cultural associations is exempt from tax. However, the tax is due by their establishments engaged in sales or provision of services. • Income earned by cooperatives and their unions. • Interest paid by the *Caisse d'Épargne de Madagascar*. • Capital gains on sales of real estate. • Income and capital gains deriving from the sales of stocks and shares held by SCRs. • Income earned by nonprofit organizations or associations exclusively engaged in the promotion of SMEs	Article 01.01.16 ➢ Calculation of depreciation of capital goods (residential buildings, work sites, premises used for business) using the diminishing balance method - Rate: 30 percent of the residual balance of qualifying property, regardless of its acquisition date - Depreciation period: FY of acquisition less one full year (even if acquired in current FY). Reason for diminishing balance depreciation: investment incentive ➢ Deficit may be carried forward over a period of 3 years Article 01.01.07 and 01.01.01: Deduction for investment (provisions revoked owing to overlap with diminishing balance depreciation) Article 01.01.16 (taxable profit rounded down to the nearest lower hundredth of an Ariary) • IBS at 30 percent for all companies • *IBS plus 50 percent for companies not headquartered in Madagascar* • *IBS at 30 percent for foreign companies operating under government contracts or contracts with local enterprises* • IBS at 10 percent for rental income from developed and undeveloped real property owned by nonprofit agencies and associations that do not meet the conditions stated in paragraphs 3 and 6 of Article 01.01.03 Article 01.01.06 bis • Absorbed company taxed on actual earnings (from its activities) at the time of the merger.	Article 01.01.17 • Prior to May 1 N (calendar year) • Prior to November 1 N (June 30); • Within the four months following the end of the fiscal period (plus 50 percent). *For foreign companies, the application of the 30-percent tax rate is conditional upon the simultaneous deposit of the report and statement of income from a government contract or contract with local businesses.* On collection: Article 20.01.41 Estimated payments (A) Payable on a semiannual basis Article 20.01.42. (B) Payable at customs ("*acompte au cordon douanier*"): • None if registered; • 5 percent (with no ceiling) if not registered. Value: raw materials and consumer goods and products.

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Tax	Type of Tax	Deductions and Exemptions	Tax Rate	Tax Reporting
			• Capital gains on fixed assets and provisions no longer needed, which are usually taxable for the absorbed company shall be taxable for the acquiring company, but may be staggered over five years. • To prevent abuses in the application of this text, if the acquiring company is sold within five years of the merger, the value of the assets of the absorbed company will be taken into account in the windfall resulting from the sale of assets. Taxable minimum: Ar 100,000 + 5 per milll of turnover: agriculture, crafts, industry, mining, hotel trade, tourism, or transportation. Ar 320,000 + 5 per milll of turnover for the rest. Enterprises exempt from IBS and from this minimum: ➢ New companies engaged in industry, crafts, agriculture, mining, transportation, tourism, hotel trade, if they run deficits for the first two fiscal years and 50 percent of the IBS and *the taxable minimum for the third year* from the date on which they were ultimately established.	

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Including the 2005 Budget

Tax	Type of Tax	Deductions and Exemptions	Tax Rate	Tax Reporting
TAX ON CAPITAL INCOME [*Impôts sur les revenus de capitaux mobiliers*—IRCM] (General Budget)	Article 01.04.01 Occasional tax collected on the distribution of profits.	Article 01.04.25 et seq. • Amortization and repayment of principal realized upon liquidation of real estate assets; and • Loans or obligations of cooperatives, central mutual credit unions. Article 01.04.32 Interest on borrowing: • Contracted for investment with external financial institutions.	Article 01.04.07 • 20 percent for corporations. • 20 percent for individuals – the IRCM is in discharge of the IRNS on capital income • 15 percent on interest paid on cash or cash security deposits (# interest on demand deposits) held in corporate funds by individuals or non-profit entities.	Art. 01.04.10: Repealed Article 01.04.15: - *Before April 30 N or October 31.* Distribution of dividends from the previous semiannual period.
TAX ON TRANSFERS ABROAD [*Taxe forfaitaire sur les transferts*] (General Budget)	Article 01.05.01 and 01.05.02 Tax payable on payments or transfers for the benefit of individuals located abroad and not taxed in Madagascar for purposes either of the income tax [*Impôts sur le revenu*] or the professional tax [*Taxe professionnelle*].	Article 01.05.03 • Amounts received in connection with scholarships; • Sale price of real or personal property; • Products already liable for the IRCM; • Repayment of principal on loans; • Standard price for purchases of imported merchandise; • Interest paid by the Malagasy Treasury or the Central Bank; and • Interest on borrowing (01.04.32)	Article 01.05.05 10 percent.	Withheld at source.

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Tax	Type of Tax	Deductions and Exemptions	Tax Rate	Tax Reporting
REAL ESTATE CAPITAL GAINS TAX [*Impôt sur la plus-value immobilière*—IPVI] (General Budget)	Article 02.12.02 Taxed assessed on transfers (for valuable consideration) of real estate assets or claims.	Article 02.12.03 Capital gains on sales of real estate included in current inventories [*stock en cours*] by *Société immobilière.*	Article 02.12.07 Capital gains tranche — Rate • Ar 0.20-2,000,000 — 5 percent • Ar 2,000,000.20-4,000,000 — 10 percent • Ar 4,000,000.20-6,000,000 — 15 percent • Ar 6,000,000.20-8,000,000 — 20 percent • > Ar 8,000,000 — 25 percent	
PERSONAL WAGE INCOME TAX [*Impôt sur les revenus des personnes physiques*—IRSA] (General Budget)	Article 03.01.07 • Wage earners Tax on wages, compensation, and fringe benefits, withheld at source. Article 01.03.08 Taxation of in kind benefits • Ar 10,000/month/vehicle rated ≤10 HP; • Ar 16,000/month/vehicle rated > 10 HP; and • 50 percent of the rent or rental value. Maximum: 25 percent of compensation established in cash: • 2 percent of compensation established in cash /domestic; and • 3 percent for other benefits.	Article 01.03.03 • Permanent or temporary allowances for damage repair; • Allowances for dependents; • Compensation associated with honorary awards; • Pay for citizens called to serve in the armed forces in a military or civilian capacity; • Civilian or military retirement pensions where the amount of the pension is determined by length of service record; and • Compensation earned by majority managers-partners in limited liability companies (SARLs).	Article 03.01.16 **Scale A** • Up to Ar 50,000: Ar 300 Income brackets of: • Ar 50,000.20-100,000 — 5 percent • Ar 100,000.20-300,000 — 15 percent • > Ar 300,000 — 30 percent ♦**Minimum** • Ar 300 if ≤ Ar 100,000 • Ar 2,500 if > Ar 100,000 ♦ **Dependent credit** Article 01.03.19 • Ar 200/month without exceeding Ar 2,400/year.	Article 01.03.12 Withheld and paid prior to the 15th of the following month. If amount withheld is less than Ar 5,000 or if wages are paid on a quarterly basis, tax payments may be cumulated on a quarterly basis. Withheld and paid within the first 15 days following the end of the quarter.

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Tax	Type of Tax	Deductions and Exemptions	Tax Rate	Tax Reporting
NONWAGE PERSONAL INCOME TAX [IRNS] (General Budget)	Article 01.02.02 • Sole proprietorship; • Income earned from engaging in an independent profession; • Corporate income, not liable for IBS tax; • Remuneration of SARL majority managers/partners; • Profits of firms engaged in industrial or commercial, crafts-related, tourism-related, or service-providing activities, or farms; • Income from land; and • Income earned in connection with the functions and responsibilities of nonmerchants.	Article 01.02.03 • Interest on saved earnings; • Interest on Treasury bills and long-term government bonds [*bons d'équipement*]; • Interest paid by the Treasury on domestic borrowing; • Interest on cash certificates [*bons de caisse*]; • Capital gains earned on selling the property; • Capital gains earned real estate sale; • Net income from developed real estate occupied by the owner as a principal residence. .	Article 01.02.12 Taxable base. Nondeductibility of deficits incurred in connection with commercial, hotel related, tourism related, mining or transport deficits, or with land income or investment income. Deficit may be carried forward for a period of three years. Article 01.02.36: **Tax scale** Based on actuals [*régime réel*] and micro and small enterprises • Up to Ar 200,000: 2,000 Income brackets of: • Ar 200,000.20-500,000 5 percent • Ar 500,000.20-4,000,000 15 percent • Over Ar 4,000,000 30 percent **Minimum** • 5 per mill on sales • Ar 5,000 for taxpayers not subject to the professional tax • 1 per mill on sales for taxpayers selling retail fuel ♦ **Dependent credit** Article 01.02.43 Ar 2,400/year and per child	B5 Article 01.02.17 Based on actuals (prior to May 1) N Prior to November 1, N, Four months from end of fiscal period plus 50 percent. Article 20.01.41 An advance payment [*acompte provisionnel*] is due every bimonthly period. Article 20.01.42 Businesses registered for tax purposes are exempted from the advance payment at customs but unregistered businesses are taxed at • 5 percent of c.i.f. value, with no limit Value: raw materials, consumer goods, and products.

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Tax	Type of Tax	Deductions and Exemptions	Tax Rate	Tax Reporting
REGISTERED NONWAGE PERSONAL INCOME TAX [IRNS Greffé] (General Budget)	Article 01.02.22 Micro and small enterprises (criteria): • Number of employees ≤50; • Pretax turnover of over Ar 6,000,000 to 50,000,000 • Principal responsibilities in production, sale where the management is undertaken by individuals venturing their own capital.		Article 01.02.37 Minimum amounts for all activities liable for tax TP>5th category = 5 TP. Article 01.02.38: Registered IRNS (minimum). For agricultural activities: • 1/2 IFT [land tax] for arable land with a surface area of less than 5 hectares; • IFT for land between 5-10 hectares; • 2 IFT for land exceeding 10 hectares; • 3 TP: activities classified in the 6th , 7th and 8th categories of the TP; • 4 TP: activities classified in the 5th category of the TP; • 5 TP: activities classified in the 4th, 3rd, 2nd and 1st categories of the TP; and • 5 TP: livestock merchants. If, and only if the turnover is below the thresholds indicated in the relevant column.	Article 01.02.21 System applicable to micro and small enterprises (Tax return to be filed prior to March 1, in the year in which the option is exercised). Article 01.02.25 Registered system [*régime greffé*] (Tax return prior to March 1).
GLOBAL TAX [*Impôt synthétique*] (General Budget)	Article 01.06.02 Ar 120,000/year<pretax turnover≤Ar 6,000,000/year: • Representative (and affording full discharge of) TP, IRNS, and TCA; • Tax earmarked for financing regionalized investment program; and • Individuals engaging in an independent activity, whether or not liable for the TP tax.	Article 01.06.03 • Corporations; and • Wholesale and semi-wholesale merchants [*commerçants de gros et demi-gros*]. Article 01.06.06: Taxpayer not subject to TP, with gains less than Ar 120,000.	Article 01.06.06 6 percent but no less than Ar 5,000.	Article 01.06.07 Tax return filed prior to March 31 for persons liable for TP. Article 01.06.08 Within three months of issue of the tax payment advice [*titre de liquidation*] for others.

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Tax	Type of Tax	Deductions and Exemptions	Tax Rate	Tax Reporting
PROFESSIONAL TAXES. PROFESSIONAL TAX [*Taxe professionnelle*—TP] (40 percent – Budget of the Autonomous Province; 30 percent – regions; 30 percent - communes)	Article 10.01.01 Professional tax payable in connection with engaging in gainful activity in Madagascar.	Article 10.01.11 • Limited partners in limited partnerships [*sociétés en commandite*]; • Wage earners; • University cafeterias or canteens; • Farmers; • Fishing and hunting concerns with a maximum staff of five; • Agricultural contractors; • Artists; • Directors of independent technical and general schools; • Newspaper and magazine salesmen; • Agencies equated with the associations covered by Article 01.01.03(3) that occasionally engage in socially-oriented activities; • Corporate health organizations; • Successful bidders on government contracts markets, supplies financed by foreign aid; • Military joint mess clubs, army residential establishments, and military rest homes.	Article 10.01.15 Tables A and B Fixed tax, according to the type of business, population of the community, place of business, number of employees and equipment used in the enterprise (Ar 300-48,000). Proportional tax based on rental value of premises, including equipment used. • Liberal professions: 1/10 VL; • Commercial activities - 1st, 2nd and 3rd category: 1/15 VL; • Industries, trades, and service provision - 1st category: 1/25 VL • Industries, trades, and service provision (2nd and 3rd categories), commercial activities (4th and 5th categories): 1/30 VL; • Other activities, mechanically equipped sites, as well as hotel rooms and accessory buildings:1/40 VL.	Article 10.01.33 Before October 15 N.
SUPPLEMENTARY PROFESSIONAL TAX [*Centimes additionnels à la taxe professionnelle*] (Budget of the Autonomous Province)			• 30 percent of fixed tax + proportional tax •	

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Tax	Type of Tax	Deductions and Exemptions	Tax Rate	Tax Reporting
BUSINESS LICENSE TAX [*Impôt de licence*] (Budget of the Autonomous Province)	Article 10.06.01 Professional tax payable on sales of alcoholic beverages.	Article 10.06.06 Sales by nonprofits, including: • University cafeterias; • Military mess halls; • Canteens, residential establishments, clubs attached to the Army; • Pharmacists and drug depositaries in connection with retail sales of raw spirit alcohol; and • Restaurateurs and hotel restaurant operators, under certain conditions.	Article 10.06.08 Rate as follows: • Category of licenses (three categories); and • Population of the community where the firm is located. Article 10.06.09 License for fairs: Ar 5,000 per day.	Article 10.06.63 In the first 20 days of each quarter for pre-existing concerns. First 20 days of operation for new sales licenses. Article 10.06.64 Prior to operation for huckster's license tax [*impôt de licence foraine*].
TAXES ON PROPERTY Land tax [*Impôt foncier sur les terrains*—IFT)] (Budget of the settlement communes [*communes d'implantation*])	Article 10.02.01 Tax levied on the estimated productive value of land based on type of crop use.	Article 10.02.03 • Land owned by government, decentralized local authorities, or public institutions assigned to perform a public service or a service deemed to be in the public interest that generates no revenue. • Land earmarked (free of charge) for medical or social charities, free education, or worship; and • Land envisaged in Article 10.03.02, liable for the IFPB.	Article 10.02.07 Rate expressed in ariary per hectare (1st –5th category), and1 percent of market value (6th category).	Article 10.02.08 Prior to October 15 N.

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Tax	Type of Tax	Deductions and Exemptions	Tax Rate	Tax Reporting
TAX ON BUILDINGS [*Impôts sur les immeubles bâtis*—IFPB] (Commune Budget)	Article 10.03.01 Tax levied on rental value of buildings.	Article 10.03.03 • Buildings owned by government, decentralized local authorities, or public institutions assigned to perform a public service or a service deemed to be in the public interest that generate no revenue; and • New constructions for a period of five years from their completion date subject to presentation of habitation or occupancy permit (Article 10.03.05). • Buildings reserved (on a free-of-charge basis) for charities, medical activities, education, or worship.	Article 10.03.10 Rates set by vote (by the municipal government) based on the rental value determined by the real estate assessment committee: Maximum rate: 5 percent Minimum rate: 2 percent. May not be less than Ar 1000 per building.	Article 10.03.11 Prior to October 15 N.
LOCAL GOVERNMENT TAX ON BUILDINGS [*Taxe annexe à l'IFPB*--TAFB] (Commune Budget)	Article 10.04.01 Taxes associated with the tax on buildings based on the rental value of real estate.	Same rules as those governing the IFPB, excluding temporary and permanent exemptions.	Article 10.04.05 Rates set by municipal government vote: Maximum rate: 5 percent Minimum rate: 2 percent.	Prior to October 15 N.
SUPPLEMENTARY REGISTRATION TAX [*Taxe additionnelle aux droits d'enregistrement*] (Commune Budget)	Article 10.05.01 Tax supplementary to the registration tax on transfers of real and personal property for consideration [*Taxe additionnelle aux droits d'enregistrement sur les mutations à titre onéreux des biens immeubles et meubles*].			

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Tax	Type of Tax	Deductions and Exemptions	Tax Rate	Tax Reporting
TAX ON COMPANY CARS [*Taxe sur les véhicules de tourisme des sociétés*] (General Budget)	Article 02.08.01 Annual tax levied on all private cars • registered in the name of a company • on the balance sheet of individual enterprises		Article 02.08.02 • Ar 6,000/year for all vehicles not exceeding 10 HP; • Ar 60,000/year and per HP for vehicles exceeding 10 HP.	Article 02.08.03 • Prior to end-January N for vehicles in circulation as at January 1 of the year; • Month purchased for vehicles purchased in the course of the year (new or used).
TAX ON MOTOR VEHICLES [*Taxes sur les véhicules à moteur*] (Tax sticker) (Budget of the Autonomous Province)	Article 02.07.01 Annual tax on all vehicles in circulation.	Article 02.07.06 • Vehicles registered to the government; • Vehicles exempt from tax under international conventions; • Special vehicles (bulldozers, materials-handling equipment, etc.); • Tractors used exclusively for agricultural activities; and Vehicles intended for sale or resale (automobile dealers) and new or used mechanical engines.	Article 02.07.01 Rate in Ariary HP / Age: 1-4 / 5-9 / 10-12 / 13-15 / >15 <5 yrs: 2,100 / 2,400 / 2,700 / 3,900 / 5,700 5<10 yrs: 1,500 / 1,800 / 2,100 / 3,300 / 5,100 10≥20 yrs: 900 / 1,200 / 1,500 / 2,100 / 2,700 >20 yrs: 450 / 600 / 750 / 1,500 / 2,400 • Utility vehicle, mass transit vehicles, taxis, service vehicles of nonprofit organizations: Ar 800; • Aircraft: Ar 120,000/year/craft. Article 10.05.02: 2 percent	Article 02.07.02 • Prior to end-June for automobiles and boats in active service; • Within one month of car in circulation, or month acquired, or time of technical inspection, or time of insurance renewal for vehicles previously tax-exempt.

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Tax	Type of Tax	Deductions and Exemptions	Tax Rate	Tax Reporting
REGISTRATION DUTIES [*Droits d'Enregistrement*] (General Budget)	Article 02.01.02 Tax levied on registration of all transactions pertaining to the transfer of property, proportional to the value of the assets in question.	Article 02.11.01 Special regimes and exemptions: • Central government and decentralized local governments; • Societies, associations recognized as being in the public interest; • Religious missions and churches; • Low-cost housing; • Pleadings and judicial decisions with respect to electoral matters; • Certificates, records, judgments relating to civil status; • Instruments in cases of expropriation in the public interest; • Instruments and transactions, contracts pertaining to agricultural or socially-oriented credit extended by banks.	Article 02.02.22 Goodwill or patronage: 6 percent. Article 02.02.39: Buildings: 6 percent Special rates: Sales of real property • Association RUP = 6 percent (Art. 02.02.39); • Developable land for housing ≤500m^2 = 8 percent (Art. 02.02.39); • Traditional housing = 10 percent; • Agricultural land ½ 12 percent (Art. 02.02.39) Other assets • 8 percent (Art. 02.02.44); • Negotiable securities: 4 percent (Art. 02.02.46). • Sale of equity participation in SARL: 2 percent (Art. 02.02.46)	

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Tax	Type of Tax	Deductions and Exemptions	Tax Rate	Tax Reporting
			Estate tax : (Art. 02.03.32-A) *A – Direct line, between spouses, and collateral line* Rate – Portion of net share (in Ariary): • 2 percent — Ar 0.20-20 million; • 5 percent — Ar 20,000,000.20-60 million; • 10 percent — Ar 60,000,000.20-100 million; • 15 percent — > Ar 100 million. *B – Between relatives more than 4 times removed and between unrelated persons* • 10 percent — Ar 0.20-20 million; • 15 percent — Ar 20,000,000.20-60 million; • 20 percent — Ar 60,000,000.20-100 million; • 25 percent — > Ar 100 million. *C – Gift of an individual company* 1. Direct line, between spouses, and collateral line • 2 percent — Ar 0.20-2 million; • 4 percent — Ar 2,000,000.20-4 million; • 6 percent — Ar 4,000,000.20-6 million; • 8 percent – Ar. 6,000,000.20-8 million; • 10 percent — > Ar 8 million. 2. Between relatives more than 4 times removed and between unrelated persons: 10 percent	

Madagascar: Summary of the Malagasy Tax System
(General Tax Code)

Including the 2005 Budget

Tax	Type of Tax	Deductions and Exemptions	Tax Rate	Tax Reporting
			Memoranda of incorporation: (Art. 02.02.32) Rate graduated by tranche of capital: • 1 percent - < Ar 10,000,000; • 0.5 percent – Ar 10,000,000-100,000,000; • 0.1 percent for amounts in excess of Ar 100,000,000. Claims: 1.50 percent (Art. 02.02.48). Prenuptial agreement [*contrat de mariage*]: 1 percent (Art. 02.02.19). Exchange of building: 4 percent (Article 02.02.20) Partition: 1 percent (Art. 02.02.28). Annuities [*Rentes*]: 1.5 percent (Art. 02.02.30). Fixed-term lease: 1 percent and 2 percent (Art. 02.02.12). Life tenancy: 8 percent and 12 percent (Art. 02.02.13).	
	Article 02.02.24 Taxes on judgments, arbitration awards, and decisions resulting in conviction.		Art. 02.02.04 through 02.02.06 Fixed taxes: • Ar 2,000 => Supreme Court decision => administrative; • Ar 4,000 => Decision of the Court of Appeal, Criminal Court; • Ar 8,000 => Decision of the Supreme Court => judicial. Transfer of lease rights: 6 percent (Art. 02.02.16)	
TAX ON REAL ESTATE ADVERTISING [*Taxe de publicité foncière*] (General Budget)	Article 02.04.01 Tax levied on: • Recording of real estate conveyancing transactions [*mutations*]; and • Procedural steps involved in inclusion in land ownership registries [*conservations*].	Article 02.04.09 • Central government and decentralized local governments; • Societies, associations recognized as being in the public interest; • Religious missions and churches; and • Low-cost housing.	Article 02.04.05 • 1 percent of the value (for leases); • 2 percent in all other cases; • 1 percent of value in the case of unconditional partitions [*partage pur et simple*].	

Madagascar: Summary of the Malagasy Tax System
(General Tax Code)

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Tax	Type of Tax	Deductions and Exemptions	Tax Rate	Tax Reporting
TAX ON INSURANCE POLICIES [*Taxe sur les contrats d'assurances*] (General Budget)	Article 02.09.01 Tax levied on all insurance contracts providing coverage against risks or on annuities.	Article 02.09.03 and Article 02.09.04 • Risks covered outside of Madagascar; • Reinsurance; • Insurance in respect of work-related accidents; • Insurance against risks associated with shipping or civil aviation, whether inbound or outbound.	Article 02.09.02 • 4.5 percent in general; • Fire insurance: - 7 percent for property damage in industrial, commercial, agricultural, artisanal, hotel, mining, tourism, or transport activities; - 20 percent in other cases; • 3 percent for life insurance; • 4 percent for insurance against risks associated with shipping, inland water transportation, or civil aviation; • 5 percent for life annuities [*rente viagère*].	Article 02.09.05 Within the first 20 days of each quarter => estimated payment, June 15 N => general tax payment.

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(General Tax Code)

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Tax	Type of Tax	Deductions and Exemptions	Tax Rate	Tax Reporting
STAMP TAX [*Droit de timbre*] (General Budget)	Article 02.06.01 Tax levied on all paper documents intended for civil and judicial proceedings, as well as for instruments that can be produced in court and entered into evidence.		Article 02.06.16 Size stamp tax Ar 400 Paper 0.42 x 0.59 Ar 300 Paper 0.29 x 0.42 Ar 200 Paper 0.29 x 0.21 ½ the tax per sheet with one page unused Article 02.06.28 Proportional stamp tax: Ar 1 per Ar 200 Article 02.06.40 Receipt stamp tax: at the rate for the proportional tax 5 per mill Article 02.06.66 Stamp tax on visas for foreigners and persons of undetermined nationality, in Ariary: • Visa valid for visits ≤ 3 months 30,000 • Transit visa for no more than 72 hours 60,000 • Transit visa for a maximum of 72 hours for cruise ship tourism 10,000 • Visa valid for visits of +3 months – 3 yrs 36,000 • Visa valid for visits of +3yrs – 5yrs 52,000 • Visa valid for visits of +5 years and permanent visa 60,000 • Final exit visa 28,000 • Extension of travel visa 28,000 These rates are reduced by half for: • missionaries of all creeds and their spouses residing in Madagascar; • foreign students enrolled in a Malagasy university or equivalent.	Article 02.06.44 In the form of a statement, within the 20 days following the end of each month.

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Including the 2005 Budget

Tax	Type of Tax	Deductions and Exemptions	Tax Rate	Tax Reporting

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Tax	Type of Tax	Deductions and Exemptions	Tax Rate	Tax Reporting
TAX ON GOODS PRODUCTS AND SERVICES				
VALUE ADDED TAX [*Taxe sur la valeur ajoutée*—TVA] (General Budget, Budget of the Decentralized Local Governments—Article 06.01.01)	Article 06.01.02 and Article 06.01.03 Tax levied on: • Commercial, industrial, agricultural, crafts-related, mining, hotel-related, or service-providing transactions; • Liberal professions; • Particular types of operations, such as imports and deliveries for personal use. Article 06.01.35 Public investment program (PIP) financed from external sources.	Article 06.01.06 ❖ Exemptions 1. Sports: ticket sales by amateur clubs; 2. School fees for general education or technical and vocational training; 3. Interest paid by the Malagasy Treasury and the *Caisse d'Epargne de Madagascar*; 4. Interest on claims, deposits, and guarantees by banking institutions headquartered in Madagascar; 5. Interest on deposits of or loans to members of mutual financial institutions; 6. Assets brought into companies established under Malagasy law by individuals or corporations; 7. Transactions in shares, equity participations in companies or associations, bonds and other securities; 8. Underwriting of industrial endowment life insurance; - Underwriting of group insurance contracts; 9. Water and electricity use by: - local authorities through water fountains, public washrooms and similar facilities, as well as lighting for streets and public spaces; - individuals for domestic use, up to 10m^3 of water and 80 kwh of electricity; - public health centers and facilities; - public schools; 10. Health care services;	Article 06.01.12 Value added tax (VAT) – 0 percent; 20 percent (recoverable), reduced to 18 percent starting September 1, 2005. Article 06.02.15 TST: 5 percent (nonrecoverable).	Article 06.01.16 Monthly for turnover > 1 billion. Quarterly for turnover < 1 billion. Article 06.02.11 TST: Bimonthly. Prior to the 20th of the month following each bimonthly period.

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(General Tax Code)

Including the 2005 Budget

Tax	Type of Tax	Deductions and Exemptions	Tax Rate	Tax Reporting
		11. Drugs, pharmaceutical products, medical equipment as per the attached list, materials and inputs for manufacturing drugs, as well as packaging for their retail sale; 12. Imports and sales of newsprint; imports, publication and sale of newspapers and magazines; 13. Postage stamps and coins that are legal tender; 14. Books, brochures, printed material for educational use; 15. Domestic kerosene and butane gas; 16. Imports and sales of corrective lenses; 17. Imports and sales of inputs exclusively for agricultural use, according to the appended list; 18. Sales of paddy and rice; 19. Imports covered in Articles 2-33 of Decree 1945 of November 17, 1960, implementing Article 163 of the Customs Code; 20. Subject to agreement to reciprocal treatment, the purchases of diplomatic missions holding diplomatic status; 21. Imports and sales of impregnated mosquito nets and coils; 22. Imports and sales of narrow fabric items, labels, kits; 23. Imports and sales of solar panels, refrigeration compressors, machines and equipment for paper manufacturing. Article 06.01.07 Exemption for imports and sales of products subject to Law 2003-026 of August 27, 2003 on tax exemptions. Article 06.01.08 ❖ Exemptions: - Wages; - Central Bank of Madagascar discounting operations; - Postal checking center transactions; - Transactions by the *Caisse d'Epargne de Madagascar*.		

Madagascar: Summary of the Malagasy Tax System
(General Tax Code)

Including the 2005 Budget

Tax	Type of Tax	Deductions and Exemptions	Tax Rate	Tax Reporting
TRANSACTION TAX [*Taxe sur les transactions*—TST] Article 06.02.01: (Budget of the Autonomous Province)	Threshold: Turnover tax subject to VAT of Ar 6,000,000-Ar 50,000,000	Articles 06.02.04 and 06.02.05 • Assets brought into companies; • Services rendered in the context of the health-care profession; • School fees; • Supply of water and electric power to public local authorities for domestic use, to medical training centers; and • Export sales.	Article 06.02.15 5 percent. • Decision 002-,MEFB/SG/DGI/DLF 09 of February 2004 setting the schedule for lump sum payments of the transaction tax payable by passenger carriers	Article 06.02.11 In the first 20 days of the month following each bimonthly period.
EXCISE TAX [*Droits d'accises—DA*] (General Budget)	Article 03.01.01 Tax levied on specific manufactured, prepared or imported products, such as: • Alcoholic beverages or liquids; • Tobacco; • Cosmetic preparations; • Mining products; and • Audiovisual equipment, etc.	Products subject to Law 2003-026 of August 27, 2003 on tax exemptions. Article 03.01.02 Exempted subject to completing the procedures set forth in Art. 05.03.01: • Products included as raw materials in other products already subject to excise tax (DA); • Products and materials included in the manufacturing of pharmaceuticals; • Materials for refrigerated production used by professionals.	In accordance with excise tax table: • Rate from 20-180 percent; and • 50 percent tax deduction for cigarettes whose reference price does not exceed Ar 200, pursuant to Decree 170/2004-MEFB/SG/DGI/DLF of January 5, 2004.	Within the first 20 days of the month following each bimonthly period.
SPECIAL TAX [*Taxe spéciale*] (FNPDJSL)	Article 03.02.01 Tax payable by manufacturers and importers of: • Alcoholic beverages; • Manufactured tobacco. Tax payable by operators of gambling establishments		Article 03.02.02 Rates set pursuant to regulations.	Article 03.02.04 Within the first 20 days of the month following the three-month period within which the product was manufactured or the revenue collected.

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Tax	Type of Tax	Deductions and Exemptions	Tax Rate	Tax Reporting
Royalties [*Redevances*] (General Budget)	Article 04.01.01 Levied on the following products: manufactured tobacco, chemical matches, wheat or maslin flour, alcoholic beverages (excluding group 2), sugar, and dairy products.	Article 04.01.04 • Same product used as raw materials; • Export sales; • Raw materials used as inputs in manufacturing drugs.	Article 04.01.10 Rates set in accordance with regulations. DECISION 001/MEFB/SG/DGI/DLF of January 1, 2004 setting the rates for fees on products, amended and supplemented by Decision 001-MEFB/SG/DGI/DELF of January 6, 2005	Article 04.01.16 Products imported => prior to customs clearance. Products manufactured locally and in accordance with special customs clearance regime [*régime suspensif*] => within the first 20 days of the month after the goods are released for consumption.
TAXES ON GAMBLING AND GAMBLING ESTABLISHMENTS [*Prélèvements sur les maisons de jeux*]				
Annual tax on slot machines, etc. [*Taxe annuelle sur les appareils automatiques*] (Budget of the Autonomous Province)	Article 10.07.01 Tax payable in connection with the operation of automatic devices known as "slot machines" and other such equipment.		Article 10.07.02 • Slot machines: Ar 400,000 per machine; • Other equipment: Ar 100,000 per machine.	Article 10.07.02 On an annual basis—must be made at the time that the equipment in question is declared operational.
Stamp tax [*Droit de timbre*] (General Budget)	Article 03.02.12 Tax payable upon admittance to gambling halls.		Article 03.02.12 By share: • Ar 10,000, pass valid for one day; • Ar 40,000 – pass valid for one week; • Ar 140,000 – pass valid for one month; • Ar 600,000 – pass valid for one year.	Article 03.02.12 Prior to the 10th of the following month. .

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(General Tax Code)

Including the 2005 Budget

Tax	Type of Tax	Deductions and Exemptions	Tax Rate	Tax Reporting
Tax on gambling products [*Prélèvement sur les produits des jeux*] (Budget of the Autonomous Province)	Article 10.07.03 Tax (in full discharge of the value added tax (VAT) applied to the gross proceeds from money-gambling activities exercised clubs, gambling houses, and hotel facilities.		Article 10.07.03 Gambling in clubs and gambling houses, graduated by threshold of annual earnings: • Up to Ar 2,000,000 — 10 percent • Ar 2,000,000.20-6,000,000 — 20 percent • Ar 6,000,000.20-12,000,000 — 40 percent • Ar 12,000,000.20-20,000,000 — 50 percent • Over Ar 20,000,000 — 60 percent Gambling in hotels, graduated by threshold of earnings: • Up to Ar 2,000,000 — 5 percent • Ar 2,000,000.20-6,000,000 — 10 percent • Ar 6,000,000.20-12,000,000 — 15 percent • Ar 12,000,000.20-18,000,000 — 20 percent • Ar 18,000,000.20-24,000,000 — 25 percent • Ar 24,000,000.20-30,000,000 — 30 percent • Over Ar 30,000,000 — 40 percent	Article 10.07.06 Within the three days after the end of the ten-day period.
ANNUAL TAX ON TELEVISIONS [*Taxe annuelle sur les téléviseurs*] (Commune Budget)	Article 18 Amending Paragraph I of Article 6 of Order [*Ordonnance*] 78009 of May 5, 1979.		Ar 4,000 per TV per year.	

Table 1. Madagascar: Growth and Structure of GDP, 1999-2004

	1999	2000	2001	2002	2003	2004 Est.
	(Annual change in percent, at 1984 prices)					
Primary sector	3.5	1.0	4.0	-1.3	1.3	3.1
Agriculture	5.3	-2.1	5.5	0.8	2.6	3.5
Livestock and fisheries	-2.6	2.8	3.1	2.6	4.1	3.3
Forestry	18.2	5.6	2.1	-20.0	-15.0	0.0
Secondary sector	4.3	7.1	7.5	-20.7	14.5	6.6
Food, beverages, and tobacco	4.3	6.2	0.9	-10.2	7.5	3.4
Energy	4.1	5.8	-6.3	-31.1	8.8	6.0
Export processing zone	22.4	22.4	40.0	-40.0	76.0	25.0
Other	0.5	5.3	19.0	-24.2	12.7	4.2
Tertiary sector	5.5	5.0	6.2	-15.0	10.6	6.0
Transport	4.4	3.9	4.6	-24.3	15.4	5.6
Construction	11.7	7.5	13.5	-15.1	30.0	29.0
Retail and wholesale	3.3	3.3	4.3	-7.4	4.1	3.4
Government	0.0	-0.1	2.0	2.0	6.0	1.6
Other services	10.0	9.7	8.4	-15.5	10.1	6.2
GDP at market prices	4.7	4.7	6.0	-12.7	9.8	5.3
Real GDP per capita	1.6	1.6	2.9	-15.2	6.7	2.0
GDP deflator	9.8	7.1	7.3	15.3	2.8	14.3
	(In percent of GDP at current prices)					
Primary sector	27.5	26.5	25.7	29.8	26.8	26.2
Agriculture	14.7	13.6	13.7	16.6	15.4	15.5
Livestock and fisheries	7.5	7.8	7.3	8.8	7.6	7.2
Forestry	5.2	5.1	4.8	4.5	3.8	3.5
Secondary sector	12.2	12.9	13.5	13.6	14.1	14.5
Food, beverages, and tobacco	5.5	5.3	5.3	5.0	4.9	4.7
Energy	1.3	1.5	1.4	1.2	1.0	1.0
Export processing zone	2.0	2.4	2.8	3.8	4.6	5.2
Other	3.4	3.7	3.9	3.5	3.6	3.6
Tertiary sector	52.3	52.1	53.8	51.3	51.6	50.9
Transport	17.2	16.8	16.9	15.2	14.4	15.2
Construction	1.5	1.6	1.8	1.8	1.9	2.3
Retail and wholesale	11.3	10.8	11.2	11.8	11.5	10.8
Government	5.4	5.5	5.8	5.5	6.4	6.2
Other services	16.9	17.4	18.3	17.0	17.4	16.3
Imputed charges	-1.3	-1.0	-0.8	-0.7	-0.7	-0.6
GDP at factor cost	90.7	90.5	92.3	94.1	91.8	90.9
Indirect taxes	9.3	9.5	7.7	5.9	8.2	9.1
Net imports of goods and nonfactor services	8.0	7.3	3.2	6.6	1.8	16.3
Total available resources	108.0	107.3	103.2	106.6	101.8	116.3
Consumption	93.1	92.3	84.7	92.3	98.2	88.9
Gross investment	14.9	15.0	18.5	14.3	3.6	27.5
Gross domestic savings	6.9	7.7	15.3	7.7	1.8	11.1

Sources: Malagasy authorities.

Table 2. Madagascar: Gross Domestic Product at Constant 1984 Prices, 1999-2004
(In billions of Ariary at 1984 prices)

	1999	2000	2001	2002	2003	2004 Est.
Primary sector	147.4	148.9	154.9	152.9	154.8	159.6
Agriculture	66.4	65.0	68.8	69.3	71.1	73.6
Livestock and fisheries	59.6	61.3	64.9	66.6	69.3	71.6
Forestry	21.4	22.6	21.2	16.9	14.4	14.4
Secondary sector	52.8	56.5	60.8	48.2	55.2	58.8
Food, beverages, and tobacco	24.8	26.3	26.6	23.9	25.6	26.5
Energy	8.9	9.4	9.0	6.2	6.8	7.2
Export processing zone	4.0	5.0	6.3	3.8	6.6	8.3
Other	15.1	15.9	18.9	14.3	16.1	16.8
Tertiary sector	214.7	225.4	239.3	203.3	224.8	238.1
Transport	73.3	76.2	79.7	60.3	69.6	73.5
Construction	7.4	8.0	9.4	8.0	10.3	13.3
Retail and wholesale	48.0	49.0	51.6	47.8	49.8	51.5
Government	21.6	21.6	22.1	22.5	23.9	24.2
Other services	64.3	70.6	76.5	64.6	71.2	75.5
Imputed charges	-7.8	-8.6	-9.3	-9.8	-11.0	-11.6
GDP at factor cost	407.1	422.2	445.6	394.5	423.8	445.0
Indirect taxes	38.0	44.0	48.7	37.1	50.1	53.8
GDP at market prices	445.1	466.2	494.3	431.6	473.9	498.8

Sources: Malagasy authorities.

Table 3. Madagascar: Supply and Use of Resources at Current Prices, 1999-2004
(In billions of Ariary)

	1999	2000	2001	2002	2003	2004
Primary sector	1,284.6	1,389.1	1,535.8	1,792.5	1,814.7	2,135.2
Agriculture	689.7	714.0	816.0	995.8	1,043.2	1,263.8
Livestock and fisheries	352.7	407.8	433.9	526.9	512.4	585.0
Forestry	242.2	267.3	285.9	269.9	259.1	286.4
Secondary sector	572.1	676.8	803.0	815.5	955.3	1,182.6
Food, beverages, and tobacco	257.5	278.9	314.2	302.5	332.6	381.0
Energy	60.9	79.0	84.5	72.1	67.0	84.4
Export processing zone	93.1	125.7	169.7	229.1	309.3	426.6
Other	160.6	193.1	234.6	211.8	246.4	290.6
Tertiary sector	2,445.3	2,735.6	3,214.1	3,084.2	3,499.7	4,148.6
Transport	804.2	880.0	1,006.4	912.4	974.0	1,241.8
Construction	71.4	86.2	104.9	110.5	130.3	190.4
Retail and wholesale	526.3	567.0	667.2	710.9	781.8	879.4
Government	253.7	290.1	344.4	328.2	434.6	503.8
Other services	789.7	912.2	1,091.2	1,022.2	1,178.8	1,333.2
Imputed charges	-61.7	-54.0	-46.7	-39.2	-45.2	-52.4
GDP at factor cost	4,240.3	4,747.5	5,506.2	5,653.1	6,224.5	7,414.0
Indirect taxes	436.5	500.9	462.4	355.3	-24,343.7	741.7
Gross domestic product at market prices	4,676.8	5,248.4	5,968.6	6,008.4	6,778.6	8,155.7
Net imports of goods and nonfactor services	372.9	384.5	191.8	394.5	609.1	1,332.0
Exports of goods and nonfactor services	1,140.9	1,610.2	1,735.6	961.8	1,564.9	2,582.8
Imports of goods and nonfactor services	1,513.8	1,994.7	1,927.4	1,356.3	2,174.0	3,914.8
Total available resources	5,049.7	5,632.9	6,160.4	6,402.8	7,387.7	9,487.7
Consumption	4,352.7	4,843.3	5,056.2	5,545.9	6,174.8	7,248.8
Government	336.4	358.1	498.0	490.0	621.6	748.4
Nongovernment	4,016.3	4,485.2	4,558.3	5,055.9	5,553.2	6,500.5
Investment	697.0	789.6	1,104.2	857.0	1,212.9	2,238.9
Government	323.2	353.2	436.2	289.2	531.5	1,018.0
Nongovernment	373.8	436.4	668.0	567.8	681.4	1,220.9
Gross domestic savings	6.9	7.7	15.3	7.7	8.9	11.1
Government	21.1	24.3	9.0	-0.8	5.7	12.8
Nongovernment	-14.1	-16.6	6.3	8.5	3.2	-1.7

Sources: Malagasy authorities.

Table 4. Madagascar: Production of Rice and Other Food Crops, 1999-2004
(In thousands of tons)

	1999	2000	2001	2002	2003	2004
Paddy	2,570.0	2,500.0	2,662.5	2,604.0	2,800.0	3,030.0
Maize	175.0	160.0	179.6	171.9	317.9	349.6
Manioc	2,461.0	2,228.0	2,510.3	2,366.3	1,992.2	2,191.4
Sweet potatoes	522.0	476.0	525.1	493.0	492.9	542.2
Potatoes	291.0	293.0	294.8	296.1	255.0	280.5

Source: Ministry of Agriculture and Rural Development.

Table 5. Madagascar: Retail Prices of Ordinary Rice, 2001-2004
(In Ariary per kilogram)

		Antananarivo			Toamasina		
		Free Market	Grocery/ Shop	Average Price	Free Market	Grocery/ Shop	Average Price
2001							
	Mar.	594.8	601.1	598.0	560.4	594.3	577.3
	Jun.	460.6	433.0	446.8	402.8	412.2	407.5
	Sep.	395.0	399.6	397.3	377.8	387.0	382.4
	Dec.	476.2	482.0	479.1	441.0	450.8	445.9
2002							
	Mar.	...	...	...	...	...	...
	Jun.	552.8	543.6	548.2	532.6	574.2	553.4
	Sep.	520.6	526.4	523.5	517.4	535.2	526.3
	Dec.	530.2	533.8	532.0	513.6	533.6	523.6
2003							
	Mar.	567.6	566.2	566.9	549.8	557.0	553.4
	Jun.	503.0	505.6	504.3	496.4	500.0	498.2
	Sep.	463.8	458.4	461.1	457.2	450.2	453.7
	Dec.	505.6	500.4	503.0	480.6	488.4	484.5
2004							
	Mar.	573.2	566.0	569.6	508.4	529.4	518.9
	Jun.	592.0	610.8	601.4	585.8	558.0	571.9
	Sep.	816.4	801.2	808.8	785.6	770.8	778.2
	Dec.	999.4	949.4	974.4	1,057.4	1,150.0	1,103.7

Source: Malagasy authorities.

Table 5. Madagascar: Retail Prices of Ordinary Rice, 2001-04 (Concluded)
(In Ariary per kilogram)

		Antsiranana			Fianarantsoa		
		Free Market	Grocery/ Shop	Average Price	Free Market	Grocery/ Shop	Average Price
2001							
	Mar.	629.5	...	629.5	382	450	416
	Jun.	625.8	...	625.8	333	350	342
	Sep.	586.4	...	586.4	317	350	334
	Dec.	597.6	...	597.6	383	350	366
2002							
	Mar.	...	...	...	...	...	...
	Jun.	562	...	562	345	380	362
	Sep.	562	...	562	457	420	439
	Dec.	562	...	562	475	450	462
2003							
	Mar.	546	...	546	428	500	464
	Jun.	536	...	536	386	380	383
	Sep.	519	...	519	436	400	418
	Dec.	513	...	513	480	500	490
2004							
	Mar.	714	...	714	503	500	501
	Jun.	813	...	813	552	500	526
	Sep.	882	...	882	780	...	780
	Dec.	1123	...	1123	1172	1095	1134

Source: Malagasy authorities.

Table 6. Madagascar: Production of Major Cash Crops, 1999-2004 [1]
(In thousands of tons)

		1999	2000	2001	2002	2003	2004
Export crops							
Coffee [2]	Production	65.0	58.1	64.5	61.5	70.3	65.0
Vanilla	Production [3]	5.4	4.4	4.6	4.4	2.6	6.0
Cloves	Production	12.5	11.8	11.8	11.8	19.0	15.0
Pepper	Production	1.6	1.6	1.6	1.6	4.7	4.5
Cocoa	Production	4.3	4.4	4.4	4.4	4.4	4.5
Butter beans	Production	8.0	7.5	…	…	…	…
Sisal	Production [5]	17.0	17.1	17.1	17.2	17.3	17.0
Industrial crops							
Cotton [6]	Production [5]	34.6	27.4	26.5	8.2	11.4	12.5
Sugarcane	Production	2,180.0	2,188.6	2,208.5	2,223.4	2,236.1	2,459.7
Groundnuts	Production	34.5	35.0	35.2	35.4	35.6	39.2

Source: Ministry of Agriculture and Rural Development.

[1] Data on total production are approximate; those on marketed production are more accurate.
[2] Unroasted coffee.
[3] Green vanilla.
[4] Prepared vanilla (4.6 kilograms green = 1 kilogram prepared).
[5] Most of the production is marketed.
[6] Seed cotton.

Table 7. Madagascar: Index of Industrial Production, Excluding the Export Processing Zone, 2000-2004

	Weights	2000	2001	2003	2004
Agro-industry and food industries	37.7	100.0	87.9	106.3	108.8
Consumer goods	4.4	100.0	80.4	96.4	100.3
Cothing and leather goods	1.9	100.0	72.8	93.9	89.8
Paper	0.9	100.0	97.6	113.8	119.9
Pharmaceuticals	1.0	100.0	73.0	84.7	98.0
Housing amenities	0.6	100.0	91.9	98.6	109.5
Equipment goods	2.4	100.0	83.3	95.6	98.4
Ships	1.8	100.0	86.9	98.3	101.5
Electrical appliances	0.6	100.0	72.8	87.8	89.4
Intermediary goods	21.6	100.0	74.1	94.0	98.1
Mineral products	8.3	100.0	80.9	112.3	123.1
Textile products	5.6	100.0	57.2	75.4	73.8
Wood and paper products	1.3	100.0	78.1	87.1	87.7
Chemicals and rubber products	3.4	100.0	94.9	101.9	100.1
Metallurgical products	3.1	100.0	61.7	73.0	77.7
Energy	33.9	100.0	69.1	107.0	109.2
Petroleum products	14.4	100.0	52.6	110.8	116.2
Water, gaz, and electricity	19.5	100.0	81.4	104.2	104.1

Sources: Ministry of Industry; and Ministry of Energy and Mining.

Table 8. Madagascar: Economic Activities of Manufacturing Enterprises in the Export Processing Zone (EPZ), 1999-2004

	EPZ Charters Granted						Cumulative EPZ Charters Granted			Total Commitments, 1990-2001 [1]	
	1999	2000	2001	2002	2003	2004	1999	2000	2001	Employment (Individuals)	Investment (In billions of Malagasy francs)
Sectors											
Agro-food processing	0	1	1				31	32	33	3,106	113.6
Textiles	5	14	15				129	143	158	68,649	615.7
Hides and skins	1	0	0				6	6	6	761	12.1
Wood processing	1	0	0				22	22	22	1,589	43.0
Data processing	2	0	0				28	28	28	2,213	20.9
Chemicals	1	0	2				9	9	11	673	31.4
Electrical and mechanical	0	0	0				4	4	4	129	5.0
Mineral processing	1	0	0				6	6	6	424	32.5
Handicrafts	1	0	1				16	16	17	2,960	13.7
Jewelry	1	0	0				12	12	12	519	11.8
Enterprises promoting and managing EPZs	-1	0	3				3	3	6	142	28.0
	0	1	0				1	2	2	106	520.3
Total	12	16	24				267	283	305	81,271	1,447.9

Source: Ministry of Industry.

[1] Cumulative totals of investment and employment commitments indicated in proposals and business plans of EPZ charter applications.

Table 9. Madagascar: Number of Enterprises with Operating Permits Under the Export Processing Zone Regime, 1999-2004

	1999	2000	2001	2002	2003	2004
Number of manufacturing enterprises operating und	267	283	307	355	377	419
Textiles and hides	135	149	164	183	204	231
Wood processing	22	22	22	25	25	25
Food, beverages, and tobacco	31	32	33	34	39	41
Other (mainly jewelry and handicrafts)	79	80	88	113	109	122
Total number of employees	64,100	81,000	110,000	67,200	85,000	115,000
(in percent)[1]	25.8	27.5	29.5	...	...	...
Wages paid (in billions of Ariary)	202.0	237.0	332.0	83.6	223.1	353.0
Value added (in billions of Ariary)	328.0	360.0	447.0	170.0	339.0	482.7
Exports (in billions of Ariary)	1,157.0	1,236.0	1,368.0	658.1	1,167.1	1,791.9
Imports (in billions of Ariary)	512.0	599.0	735.0	722.0	1,402.9	2,632.4

Source: Project Madio, *Le Secteur Industriel Formel à Madagascar: Caractéristiques, Performances, Perspectives* , various issues, 1995-97.

[1] In percent of the total for the manufacturing sector.

Table 10. Madagascar: Production and Export of Major Minerals, 1999-2003

	1999	2000	2001	2002	2003
Production (thousands of tons)					
Chromite	0.1	131.3	60.9	10.7	...
Graphite	16.1	40.3	12.6	7.5	...
Exports (thousands of tons)					
Chromite	81.5	70.0	50.5	66.1	68.2
Graphite	14.1	16.8	11.4	9.0	8.2
Export value (millions of SDRs)					
Chromite	3.2	4.2	1.8	2.3	3.4
Graphite	4.3	5.2	3.7	3.1	3.7
Unit value (SDRs per ton)					
Chromite	39.8	59.8	35.2	34.2	50.2
Graphite	305.3	311.1	329.4	338.7	452.8

Source: Ministry of Energy and Mining.

Table 11. Madagascar: Tourism Indicators, 1999-2004 Prel.
(In thousands, unless otherwise indicated)

	1999	2000	2001	2002	2003	2004 Prel.
Number of tourists	138.3	160.1	170.2	61.7	139.2	228.8
Annual growth in percent	14.1	15.8	6.3	-63.8	125.8	64.3
Hotel capacity (number of rooms)	7.2	7.8	8.4	8.8	9.3	10.2
Average capacity utilization (in percent) [1]	60.0	63.0	66.0	22.0	40.0	55.0
Number of tourist nights (in thousands)	2,627	3,041	3,234	493	1,949	4,347
Annual growth in percent	14.1	15.8	6.3	-84.7	295.1	123.0
Average length of stay (days)	20.0	20.0	20.0	9.0	15.0	20.0
Foreign exchange receipts from tourism (in millions of SDRs)	72.9	91.9	90.2	27.8	54.0	104.3
Annual growth in percent	11.3	26.1	-1.8	-69.2	94.2	93.1

Source: Ministry of Transportation, Meteorology, and Tourism; Directorate of Tourism.

[1] Survey coverage is not complete.

Table 12. Madagascar: Production and Consumption of Electricity, 1999-2004
(In millions of kilowatt-hours)

	1999	2000	2001	2002	2003	2004
Production[1]	721.3	779.8	785.2	780.0	898.3	983.6
Hydroelectric	515.4	539.6	528.4	535.4	611.7	637.0
Thermal	205.9	240.2	256.8	244.6	286.6	346.5
Consumption	571.5	616.5	645.3	595.4	675.5	755.6
Public lighting	8.3	8.8	9.3	9.9	9.6	10.2
Households	253.6	281.3	298.2	298.4	328.1	365.5
Other	309.5	326.4	337.8	287.1	337.8	380.0

Source: Ministry of Energy and Mining.

[1] Electric power generated by the electricity and water company, that is, excluding electricity generated by industries for their own consumption.

Table 12. Madagascar: Production and Consumption of Electricity, 2001-04 (Concluded)
(In millions of kilowatt-hours)

	2001	2002	2003	2004
Primary sector	2.2	2.5	2.3	2.0
			0.0	0.0
Agriculture	0.4	0.5	0.5	0.3
Livestock and fisheries	1.8	1.9	1.8	1.7
Forestry	0.0	0.1	0.0	0.0
Secondary sector	221.1	168.1	215.2	235.6
Agro-industry	13.6	16.0	16.2	15.5
Mining	0.1	0.1	0.1	0.1
Energy	2.6	2.8	4.2	4.2
Water	41.1	41.1	44.5	44.7
Food	12.6	11.8	14.8	17.5
Softdrings	10.4	9.3	10.9	10.8
Tobacco industry	1.4	1.3	2.5	2.3
Cooking oil	5.6	4.2	5.4	5.7
Pharmaceuticals	14.9	12.2	16.5	18.3
Textile	83.3	43.4	66.6	80.8
Leather	1.1	0.8	1.0	1.2
Wood	4.8	3.0	4.7	4.3
Construction material	17.5	11.6	15.4	17.7
Metallurgical	2.0	1.9	1.8	2.0
Transport materials	1.0	1.1	1.3	0.7
Electrical appliances	1.1	0.8	0.8	0.9
Industrial paper	7.0	6.0	7.6	7.3
Others	1.3	0.8	0.9	1.4
Tertiary sector	65.0	61.9	71.0	77.3
Public works	2.8	2.5	2.6	2.4
Transport	6.7	5.7	7.0	7.8
Telecommunications	11.6	11.2	11.9	11.7
Commerce	9.3	8.8	10.8	13.4
Banking and insurance	1.8	2.3	2.6	2.9
Services	23.3	22.1	26.0	28.2
Public services	4.3	4.3	4.9	5.5
Other services	5.3	5.0	5.3	5.4
Total	288.3	232.5	288.5	314.8

Source: Ministry of Energy and Mining.

Table 13. Madagascar: Prices of Petroleum Products, 1999-2004 [1]
(In Ariary per liter, unless otherwise indicated)

		Gasoline (Regular)	Gasoline (Premium)	Gas Oil
1999	March	418	506	340
	June	458	582	354
	September	496	670	368
	December	590	796	422
2000	March	628	882	446
	June	680	1,000	480
	September	750	1,020	550
	December	840	1,100	600
2001	March	840	1,100	600
	June	907	1,117	600
	September	860	1,060	600
	December	826	1,024	580
2002	March	802	1,000	544
	June	1,070	1,280	850
	September	1,104	1,378	826
	December	1,104	1,378	826
2003	March	1,098	1,372	800
	June	1,002	1,268	714
	September	1,054	1,322	726
	December	1,008	1,274	734
2004	March	1,208	1,478	896
	June	1,690	2,380	1,280
	September	1,798	1,980	1,354
	December	1,738	1,980	1,478

Source: Ministry of Energy and Mining.

[1] Wholesale prices from storage facilities; retail prices are higher by a small, fixed profit margin. Prices recorded in the capital city only.

[2] Prices are for a 12.5 kilogram container.

Table 14. Madagascar: Minimum and Maximum Monthly Wages, 1994-2004 [1]
(In Ariary)

	Agricultural [2]		Nonagricultural [3]	
	Minimum	Maximum	Minimum	Maximum
January 1994 - February 1995	12,847	31,754	12,663	31,199
March 1995 - October 1996	22,487	48,816	22,110	47,999
November 1996 - February 1998	24,756	53,741	24,318	52,789
March 1998 - May 1999	28,456	61,776	26,972	60,728
June 1999 - February 2000	31,303	67,954	30,769	66,800
March 2000 - December 2000	32,517	70,589	32,031	69,562
January 2001 - March 2001	34,960	75,840	34,458	74,809
Since April 2001 - December 2003	36,520	79,200	36,018	78,172
2004	47,840	111,200	47,180	109,614

Source: Ministry of Civil Service.

[1] "Minimum" indicates the minimum wage in the lowest wage category, and "maximum" indicates the minimum wage in the highest wage category.

[2] On the basis of 200 working hours per month.

[3] On the basis of 173.33 working hours per month.

Table 15. Madagascar: Consumer Price Index by Product, 2002-2004
(Period averages: January 2000 - December 2000 = 100)

		2002				2003				2004			
	Weight	I	II	III	IV	I	II	III	IV	I	II	III	IV
General index	10,000	115.9	132.7	126.3	125.2	125.8	122.9	120.6	122.6	126.4	134.7	144.6	154.1
Foodstuffs, Beverage and Tobacco	5,007	108.7	123.2	118.6	117.6	117.6	112.9	108.9	112.3	115.9	127.6	140.3	155.0
Clothing	698	105.4	109.5	114.8	115.2	115.3	116.1	116.3	114.0	114.4	117.3	120.3	123.1
Shelter, Water, Lighting, Gaz et other fuel	1,824	125.0	136.0	129.9	127.2	132.5	131.4	130.6	133.7	144.1	147.7	153.0	158.8
Furniture, Household Equipment, Maintenanc	456	113.0	122.2	133.0	133.0	133.7	137.5	137.6	136.9	135.9	138.3	144.6	148.2
Health	261	109.3	115.2	120.1	123.1	119.3	116.0	114.3	112.1	114.8	123.4	131.1	130.2
Transportation	804	145.7	214.3	164.9	161.4	155.4	149.1	149.1	147.2	147.5	160.1	179.4	182.9
Entertainment, Spectacle and Culture	255	112.3	123.7	120.2	119.4	117.8	116.1	107.6	103.0	103.6	109.2	114.1	115.1
Education	372	130.2	138.3	145.5	149.6	151.8	152.0	155.1	161.6	161.0	161.3	165.8	175.3
Hotel, Restaurant	151	114.5	130.7	131.2	133.7	131.0	127.2	124.7	123.9	124.7	127.8	130.5	130.2
Others goods and services	171	112.4	115.9	117.8	117.6	126.2	131.0	130.4	131.1	132.0	134.0	136.2	142.5
						(Annual percentage change)							
General index		6.9	25.4	18.9	14.7	8.6	-7.4	-4.5	-2.1	0.4	9.6	19.9	25.7
Foodstuffs, Beverage and Tobacco		-0.9	20.0	24.1	18.2	8.1	-8.4	-8.2	-4.5	-1.5	13.0	28.8	37.9
Clothing		0.6	2.7	3.7	6.0	9.4	6.0	1.2	-1.1	-0.8	1.0	3.5	8.1
Shelter, Water, Lighting, Gaz et other fuel		17.0	27.2	12.1	7.9	6.0	-3.4	0.6	5.1	8.8	12.5	17.1	18.8
Furniture, Household Equipment, Maintenance		9.4	13.2	19.0	19.1	18.3	12.6	3.5	3.0	1.6	0.6	5.1	8.2
Health		4.3	7.5	8.7	11.1	9.1	0.7	-4.8	-8.9	-3.7	6.4	14.7	16.2
Transportation		29.0	84.5	28.7	20.2	6.7	-30.4	-9.6	-8.8	-5.1	7.4	20.3	24.2
Entertainment, Spectacle and Culture		10.4	19.5	3.0	0.2	4.9	-6.2	-10.5	-13.7	-12.0	-5.9	6.0	11.7
Education		18.6	21.6	17.8	15.7	16.6	9.9	6.6	8.0	6.1	6.1	6.9	8.5
Hotel, Restaurant		13.2	29.1	27.8	30.6	14.4	-2.7	-4.9	-7.3	-4.8	0.5	4.7	5.0
Others goods and services		7.7	6.5	4.9	1.7	12.3	13.0	10.7	11.5	4.6	2.3	4.4	8.7

Source: National Institute of Statistics.

1/ Since 2001.

Table 16. Madagascar: Central Government Financial Operations, 1999-2004
(In billions of Ariary)

	1999	2000	2001	2002	2003	2004
Total revenue and grants	702.0	802.9	838.1	610.6	1,045.0	1,653.4
Total revenue	533.5	613.5	605.8	480.6	698.9	982.3
Budgetary revenue	533.5	613.5	605.8	480.6	698.9	982.3
Of which: tax revenue	516.0	594.4	581.3	460.8	678.5	887.1
Extrabudgetary and capital revenue	0.0	0.0	0.0	0.0	0.0	0.0
Grants	168.5	189.3	232.3	130.0	346.1	671.1
Current grants	34.4	35.8	85.5	49.9	171.9	318.7
Project grants	134.1	153.6	146.8	80.1	174.2	352.4
Total expenditure	758.2	871.4	1,052.5	941.9	1,324.4	2,045.3
Current expenditure	435.0	503.6	616.3	621.9	771.7	1,027.3
Budgetary expenditure	434.5	453.9	600.2	556.2	751.6	896.9
Personnel	200.1	227.1	267.5	276.0	365.4	400.0
Other noninterest expenditure	135.8	152.4	214.3	148.3	236.1	257.4
Foreign interest obligations	65.0	26.3	69.8	81.5	60.6	113.9
Domestic interest obligations	33.6	48.2	48.6	50.4	89.5	125.5
Treasury operations (net) [1]	0.5	41.5	10.9	40.4	12.1	128.6
Emergency expenditure [2]	0.0	8.1	5.0	24.4	7.1	0.0
Counterpart funds-financed operations	...	0.0	0.3	0.8	0.9	1.8
Capital expenditure	323.2	367.8	436.2	289.2	531.5	1,018.0
Domestic financing	85.9	130.9	188.5	111.9	172.3	229.5
Foreign financing	237.3	237.0	247.7	177.2	359.2	788.5
Net cost of structural reforms	-73.9	-96.5	-44.6	1.2	-3.9	-8.8
Exceptional revenue	9.1	3.5	2.3	1.2	1.2	1.2
Cost of structural reforms	83.1	100.0	46.9	0.0	5.1	10.0
Overall balance (commitment basis)						
Including grants	-130.1	-165.0	-259.0	-330.1	-283.4	-400.6
Excluding grants	-298.6	-354.4	-491.3	-460.2	-629.5	-1,071.7
Change in arrears	13.5	-12.6	-5.4	-42.5	-41.0	-63.2
Total overall balance (cash basis, including grants)	-116.6	-177.6	-264.4	-372.6	-324.4	-463.8

Table 16. Madagascar: Central Government Financial Operations, 1999-2004 (Concluded)
(In billions of Ariary)

	1999	2000	2001	2002	2003	2004
Financing	116.6	177.6	264.4	372.6	324.4	463.8
Foreign (net)	57.0	91.5	127.4	218.8	191.6	518.2
Drawings	103.1	90.1	144.7	230.0	249.3	579.3
Budget	...	6.7	43.7	132.9	64.3	143.2
Projects	...	83.4	100.9	97.1	185.0	436.1
Amortization due	-121.5	-57.6	-116.2	-116.6	-126.9	-188.5
Change in external arrears	5.5	-9.9	-13.6	0.0	-13.5	0.0
External debt relief	69.8	68.9	0.0	0.0	82.6	127.4
Domestic (net)	49.3	76.8	116.2	144.5	119.3	-84.6
Banking system	33.4	0.5	93.7	144.4	8.8	-215.6
Nonbanking system	15.9	23.8	22.5	-14.4	84.5	107.9
Privatization receipts	10.4	9.3	20.8	9.3	13.5	30.2

Sources: Ministry of Economy, Finance, and Budget; and Fund staff estimates.

[1] Includes annexed budgets of quasi-public entities, including port authorities, the post office, government printing office, civil service retirement funds, and correspondent accounts of local authorities.

[2] For 2000, the government budgeted Ariary 13.8 billion to address exceptional developments related to the resurgence of a cholera epidemic and the devastating effects of three cyclones in the year.

[3] Total revenue minus expenditure, excluding foreign interest payments and foreign-financed capital expenditure.

Table 17. Madagascar: Central Government Fiscal Indicators, 1999-2004
(In percent of GDP, unless otherwise indicated)

	1999	2000	2001	2002	2003	2004
Total revenue and grants	15.0	15.3	14.0	10.2	15.4	20.3
Total revenue	11.4	11.7	10.1	8.0	10.3	12.0
Of which: tax revenue	11.0	11.3	9.7	7.7	10.0	10.9
Grants	3.6	3.6	3.9	2.2	5.1	8.2
Current grants	0.7	0.7	1.4	0.8	2.5	3.9
Project grants	2.9	2.9	2.5	1.3	2.6	4.3
Total expenditures	16.2	16.6	17.6	15.7	19.5	25.1
Current expenditure	9.3	9.6	10.3	10.4	11.4	12.6
Noninterest expenditure	7.2	7.2	8.1	7.1	8.9	8.1
Personnel	4.3	4.3	4.5	4.6	5.4	4.9
Other noninterest expenditure	2.9	2.9	3.6	2.5	3.5	3.2
Interest obligations	2.1	1.4	2.0	2.2	2.2	2.9
Treasury operations (net) [1]	0.0	0.8	0.2	0.7	0.2	1.6
Emergency expenditures [2]	0.0	0.2	0.1	0.4	0.1	0.0
Capital expenditure	6.9	7.0	7.3	4.8	7.8	12.5
Domestically financed expenditure	1.8	2.5	3.2	1.9	2.5	2.8
Foreign-financed expenditure	5.1	4.5	4.2	2.9	5.3	9.7
Net cost of structural reforms	-1.6	-1.8	-0.7	0.0	-0.1	-0.1
Exceptional revenue	0.2	0.1	0.0	0.0	0.0	0.0
Cost of structural reforms	1.8	1.9	0.8	0.0	0.1	0.1
Overall balance (commitment basis)						
Including grants	-2.8	-3.1	-4.3	-5.5	-4.2	-4.9
Excluding grants	-6.4	-6.8	-8.2	-7.7	-9.3	-13.1
Change in arrears	0.3	-0.2	-0.1	-0.7	-0.6	-0.8
Total overall balance (cash basis, including grants)	-2.5	-3.4	-4.4	-6.2	-4.8	-5.7

Table 17. Madagascar: Central Government Fiscal Indicators, 1999-2004 (Concluded)
(In percent of GDP, unless otherwise indicated)

	1999	2000	2001	2002	2003	2004
Financing	2.5	3.4	2.5	4.4	4.8	5.7
Foreign (net)	1.2	1.7	0.2	1.9	2.8	6.4
Drawings	2.2	1.7	2.4	3.8	3.7	7.1
Budget	...	0.1	0.7	2.2	0.9	1.8
Projects	...	1.6	1.7	1.6	2.7	5.3
Amortization due	-2.6	-1.1	-1.9	-1.9	-1.9	-2.3
Change in external arrears	0.1	-0.2	-0.2	0.0	-0.2	0.0
External debt relief	1.5	1.3	0.0	0.0	1.2	1.6
Domestic (net)	1.1	1.5	1.9	2.4	1.8	-1.0
Of which: banking system	0.7	0.0	1.6	2.4	0.1	-2.6
Privatization receipts	0.2	0.2	0.3	0.2	0.2	0.4
Memorandum item:						
Nominal GDP (in billions of Ariary)	4,676	5,248	5,969	6,008	6,779	8,156

Sources: Ministry of Economy, Finance, and Budget; and Fund staff estimates.

[1] Includes annexed budgets of quasi-public entities, including port authorities, the post office, government printing office, civil service retirement funds, and correspondent accounts of local authorities.

[2] For 2000, the government budgeted Ariary 13.8 billion to address exceptional developments related to the resurgence of a cholera epidemic and the devastating effects of three cyclones in the year.

[3] Overall balance, excluding grants, foreign-financed capital expenditures, and foreign interest payments.

Table 18. Madagascar: Budgetary Revenue, 1999-2004
(In billions of Ariary)

	1999	2000	2001	2002	2003	2004
Tax revenue	515.9	594.5	581.3	460.8	678.5	887.1
Taxes on net income	79.6	93.5	118.9	105.5	114.2	159.5
Companies	41.4	47.3	60.3	43.1	53.4	69.6
Individuals	25.8	30.6	40.7	41.8	45.6	61.2
Tax on income (IRNS)	21.2	5.4	7.6	7.5	9.6	12.1
Tax on wages and salaries (IRSA)	4.6	25.3	33.2	34.3	36.0	49.1
Other	12.4	15.6	17.9	20.6	15.1	28.7
Taxes on property	5.0	6.2	6.8	5.4	8.4	11.5
Taxes on goods and services	132.3	173.0	160.8	137.9	207.4	265.0
Value-added tax (VAT)	77.8	102.6	105.1	85.6	118.2	173.2
Excises	25.6	31.9	22.1	20.5	35.6	37.1
Fiscal monopoly profits	22.2	35.8	31.2	23.8	41.7	41.3
Other	6.7	2.7	2.5	8.1	11.9	13.4
Taxes on foreign trade	296.2	318.2	290.4	208.7	342.6	444.9
Import duties	296.2	318.2	290.4	208.7	342.6	444.9
Customs duty	29.7	24.7	23.3	12.6	26.3	29.2
Fiscal duty	52.9	48.1	46.3	32.6	53.1	77.5
VAT on imports	124.8	142.3	144.5	91.6	156.2	186.0
Petroleum products	67.9	79.5	65.0	58.9	73.3	136.4
Other	20.9	23.5	11.4	12.9	33.7	15.8
Other taxes	2.8	3.6	4.3	3.2	5.8	6.3
Nontax revenue	17.4	19.1	24.6	19.8	20.4	95.2
Budgetary revenue	533.3	613.5	605.8	480.6	698.9	982.3

Source: Ministry of Economy, Finance, and Budget.

Table 19. Madagascar: Current Budgetary Expenditure, 1999-2004

	1999	2000	2001	2002	2003	2004
			(In billions of Ariary)			
Economic classification						
Current expenditure	435.0	503.6	616.3	621.9	771.7	1,027.3
Personnel	200.1	227.1	267.5	276.0	365.4	400.0
Other noninterest expenditure	135.8	152.4	214.3	160.0	236.1	257.4
Goods and services	80.4	98.4	137.3	103.0	141.9	140.9
Transfers and subsidies	55.4	54.0	77.0	57.0	94.2	116.5
Interest on public debt	98.6	74.5	118.4	131.9	150.1	239.5
Foreign interest obligations	65.0	26.3	69.8	81.5	60.6	113.9
Domestic interest obligations	33.6	48.2	48.6	50.4	89.5	125.5
Treasury operations [1]	0.5	41.5	10.9	40.4	12.1	128.6
Emergency expenditure [2]	0.0	8.1	5.0	24.4	7.1	0.0
Functional classification						
Budgetary expenditure	434.5	462.0	605.5	581.5	759.6	898.7
General expenditure [3]	78.4	176.0	213.5	156.5	305.0	320.4
Of which : Defense	16.0	63.9	85.7	78.9	89.8	101.8
Education	30.1	111.1	147.3	152.2	167.5	205.4
Of which : Universities	6.8	18.3	26.3	29.7	30.1	38.0
Health	28.6	36.5	53.1	47.4	55.2	53.2
Social and community services	0.0	9.3	9.6	7.0	6.0	7.1
Economic services	11.2	32.2	32.6	44.0	42.4	34.8
Of which : Agriculture [4]	152.1	16.6	14.5	15.3	16.4	14.8
Public works	98.6	3.8	5.1	15.9	8.1	8.2
Other	286.2	97.0	149.3	174.4	183.4	277.8
Memorandum items:			(In percent of GDP)			
Noninterest budgetary expenditure	7.2	7.2	8.1	7.3	8.9	8.1
Social sector current expenditure [6]	1.3	3.0	3.5	3.4	3.4	3.3
Of which : health	0.6	0.7	0.9	0.8	0.8	0.7
Defense	0.3	1.2	1.4	1.3	1.3	1.2

Sources: Ministry of Economy, Finance, and Budget; and Fund staff estimates.

[1] Beginning in 1999, treasury revenue is classified as a negative outlay in treasury expenditures, which from then on are reported on a net basis.

[2] For 2000, the government budgetized FMG 69 billion to address exceptional developments related to the resurgence of a cholera epidemic and the devastating effects of recent cyclones.

[3] Including national defense and security expenditures.

[4] Including livestock, fishing, water, and forestry.

[5] Including revenue sharing with local governments and payments to international organizations.

[6] Including expenditure on education, health, and social and community services.

Table 20. Madagascar: Central Government Capital Expenditure, 1999-2004 [1]

	1999	2000	2001	2002	2003	2004
	(In percent of total government capital expenditures)					
General public services	31.3	35.2	38.5	32.8	57.5	65.5
Education	15.7	4.9	6.4	5.1	10.6	17.3
Health	12.5	6.5	5.7	5.9	7.7	26.9
Social and community services	2.4	1.7	2.7	1.8	2.5	5.5
Economic services	92.6	51.7	65.3	33.0	66.2	161.5
Agriculture [2]	37.2	20.9	23.5	15.3	18.3	36.1
Public works [3]	40.9	21.0	29.0	9.7	31.9	79.2
Other	(54.5)	0.0	(18.6)	21.4	(44.5)	(176.8)
Total	100.0	100.0	100.0	100.0	100.0	100.0
	(In billions of Ariary, unless otherwise indicated)					
Budgetary capital expenditure						
Domestically financed	85.9	130.9	188.5	111.9	172.3	229.5
Foreign Financed	237.3	237.0	247.7	177.2	359.2	788.5
Total	323.2	367.8	436.2	289.2	531.5	1,018.0
(In percent of GDP)	6.9	7.0	7.3	4.8	7.8	12.5

Sources: Ministry of Economy, Finance, and Budget; and Fund staff estimates.

[1] On a payment order basis for domestically financed expenditure and on a cash basis for other components.

[2] Including livestock, fishing, water, and forestry.

3 Mainly roads, ports, bridges, and other infrastructure.

Table 21. Madagascar: Central Government Personnel Expenditure and Number of Civil Servants, 1999-2004
(In billions of Ariary, unless otherwise indicated)

	1999	2000	2001	2002	2003	2004
Personnel expenditure (commitment basis) [1] [2]	200.1	227.1	267.5	276.0	365.4	400.0
Annual change in percent	4.2	13.5	17.8	3.2	32.4	9.5
In percent of current budgetary expenditure	46.1	50.0	44.6	49.6	48.6	44.6
In percent of total government expenditure	26.4	26.1	25.4	29.3	27.6	19.6
In percent of GDP	4.3	4.3	4.5	4.6	5.4	4.9
Civil servants (number at end-December) [3]						
Civilian	113,728	109,603	117,355	118,949	118,949	121,909
Military	21,760	21,760	21,491	24,030	24,030	24,030
Total	135,488	131,363	138,846	142,979	142,979	145,939
Annual percent change	7.9	-3.0	5.7	3.0	0.0	2.1
Memorandum items:						
Average monthly civil servants' salary						
In thousand of Ariary	110.7	132.3	...	...	...	...
Annual change in percent	18.3	19.5	...	...	...	...
Annual percent change in real terms [4]	8.4	7.6	...	...	...	...
Total government expenditure (billions of Ariary)	758.2	833.7	...	...	...	...
Nominal GDP (billions of Ariary)	4675.8	5248.4	...	...	...	...

Sources: Ministry of Economy, Finance, and Budget; and Fund staff estimates.

[1] Including only regular staff. Expenditure on some categories of temporary personel is included in goods and services outlays.

[2] Excluding medical expenses.

[3] Data on actual positions filled, which may differ from other sources.

[4] Annual average percentage change in the average civil servants' salary deflated by the consumer price index.

Table 22. Madagascar: Structure and Adjustment of Public Sector Salaries, 1997-2004
(In thousands of Ariary)

	Jan. 1997 - Dec. 1997	Jan. 1998 - Apr. 1998	May 1998 - Feb. 1999	Mar. 1999 - Feb. 2000	Mar. 2000 - Jan. 2001	Feb. 2001 - Dec. 2001	Starting Jan. 2002
Category I							
Minimum	41.8	47.9	...	53.5	59.4	62.6	70.8
Maximum	57.4	63.5	...	71.0	90.8	99.2	107.4
(midpoint)	49.6	55.7	...	62.3	75.1	80.9	89.1
Category II							
Minimum	48.6	54.7	...	61.1	68.4	73.8	82.0
Maximum	66.2	73.1	...	81.8	113.3	127.0	135.2
(midpoint)	57.4	63.9	...	71.5	90.9	100.4	108.6
Category III							
Minimum	52.8	59.0	65.7	73.5	80.8	87.1	95.3
Maximum	83.5	92.1	96.9	108.4	156.4	175.8	184.0
(midpoint)	68.2	75.6	81.3	90.9	118.6	131.4	139.6
Categories IV and V							
Minimum	61.7	68.3	71.5	80.0	116.6	124.2	132.4
Maximum	111.9	122.6	132.1	140.4	229.1	251.0	259.2
(midpoint)	86.8	95.4	101.8	110.2	172.9	187.6	195.8
Categories VI and VII							
Minimum	70.0	77.1	83.0	90.4	136.1	145.5	153.7
Maximum	123.8	134.5	150.1	163.6	289.7	317.5	325.7
(midpoint)	96.9	105.8	116.6	127.0	212.9	231.5	239.7
Categories VIII and IX							
Minimum	79.9	87.7	98.3	107.1	164.7	176.5	184.7
Maximum	147.0	160.1	185.2	208.8	348.9	380.4	388.6
(midpoint)	113.4	123.9	141.7	158.0	256.8	278.5	286.7
Category X							
Minimum	82.6	91.1	102.2	133.4	313.0	339.9	348.1
Maximum	179.8	195.1	239.8	261.4	436.7	444.2	452.4
(midpoint)	131.2	143.1	171.0	197.4	374.9	392.1	400.3

Sources: Ministry of Economy, Finance, and Budget.

Table 23. Madagascar: Monetary Survey, 1999-2004

	1999	2000	2001	2002	2003	2004
	(In billions of Ariary; end of period)					
Net foreign assets	342.3	401.3	514.2	475.6	545.0	953.3
Central bank	211.1	234.1	357.5	285.6	316.7	560.5
Commercial banks	131.2	167.2	156.7	189.9	228.4	392.7
Long-term foreign liabilities	-52.2	-45.9	-52.8	-43.8	-49.2	-67.0
Central bank	-38.2	-33.5	-29.8	-31.1	-31.9	-47.1
Commercial banks	-14.0	-12.3	-23.0	-12.7	-17.3	-19.9
Net domestic assets	706.8	828.0	1,010.1	1,143.9	1,208.7	1,209.9
Net credit to government	343.0	371.3	495.4	622.4	697.8	497.0
Net claims on government [1]	312.1	312.7	409.6	541.4	615.7	403.8
Central bank	244.1	232.5	241.6	317.0	339.5	262.9
Commercial banks	68.0	80.1	168.0	224.3	276.2	141.0
Other claims	30.9	58.6	85.8	81.1	82.1	93.2
Credit to the economy	391.1	483.0	555.7	560.3	604.1	834.6
Central bank	3.2	22.2	55.3	72.8	3.5	3.9
Commercial banks	0.4	460.7	500.2	486.9	600.6	830.8
Other claims	387.5	0.1	0.2	0.6	0.0	0.0
Other items (net)	-27.3	-26.4	-40.9	-38.9	-93.2	-121.7
Foreign currency adjustment	13.2	16.9	11.1	11.0	-1.7	-102.9
Central bank	34.3	38.0	33.2	46.5	75.0	159.5
Commercial banks	-74.8	-81.3	-85.2	-96.4	-166.6	-178.4
Broad money (M3)	996.9	1,183.4	1,471.5	1,575.6	1,704.6	2,096.1
Currency in circulation	287.6	357.3	431.9	466.0	514.0	579.0
Total deposits	709.2	826.0	1,039.6	1,109.6	1,190.6	1,517.2
Demand deposits	429.2	468.4	653.2	686.6	662.8	811.1
Quasi money	280.1	357.6	386.4	423.0	527.7	706.0
Of which						
Resident deposits in foreign currencies	122.9	168.3	154.8	175.8	217.4	349.3
Short-term obligations	30.4	33.9	34.5	35.5	35.4	28.4
Memorandum items:	(Change in percent of beginning-of-period broad money stock)					
Net foreign assets	9.0	5.9	9.5	-2.6	4.4	23.9
Net domestic assets	0.9	12.2	15.4	9.1	4.1	0.1
Net credit to government	-7.8	2.8	10.5	8.6	4.8	-11.8
Credit to the economy	10.3	9.2	6.1	0.3	2.8	13.5
Change from previous year (in percent)	26.2	23.5	15.0	0.8	7.8	38.2
Broad money (M3)	9.8	18.7	24.4	7.1	8.2	23.0

Sources: Central Bank of Madagascar; and Fund staff estimates.

[1] In 2001, the change in net claims on government differs from the amount indicated in the government operations tables because the latter does not include the assumption by the government of the state company's (SOLIMA) debt to the central bank estimated at FMG 61.8 billion.

Table 24. Madagascar: Summary Accounts of the Central Bank, 1999-2004
(In billions of Ariary, unless otherwise indicated; end of period)

	1999	2000	2001	2002	2003	2004
Net foreign assets	211.1	234.1	357.5	285.6	316.7	560.5
Foreign assets	297.4	373.4	528.8	463.6	508.0	950.2
Foreign liabilities (short term)	-4.0	-2.7	-2.4	-5.4	-2.6	-1.4
Poverty Reduction and Growth Facility	-82.3	-136.5	-168.8	-172.6	-188.8	-388.2
Long-term foreign liabilities	-38.2	-33.5	-29.8	-31.1	-31.9	-47.1
Net domestic assets	296.6	321.8	349.3	452.7	420.1	313.9
Claims on government (net)	244.1	232.5	241.6	317.0	339.5	262.9
Credit to government	371.5	404.6	419.3	427.5	474.5	379.5
Statutory advances	39.5	75.5	89.7	102.5	83.7	30.7
Consolidated loans	219.9	219.9	219.9	219.9	219.9	0.0
Foreign currency loans	109.0	106.7	108.0	104.8	99.3	0.0
Other	3.1	2.5	1.7	0.3	71.5	348.9
Government deposits	-127.3	-172.1	-177.7	-110.4	-135.0	-116.6
Claims on public companies and customers	3.2	22.2	55.3	72.8	3.5	3.9
Net claims on banks	15.0	11.9	8.1	5.4	3.4	-7.7
Claims on banks	15.0	11.9	8.1	5.4	3.4	2.3
Reverse auctions	0.0	0.0	0.0	0.0	0.0	-10.0
Other items (net)	34.3	55.1	44.4	57.4	73.7	54.8
Currency valuation adjustment	15.2	17.1	11.2	10.9	-1.4	-104.7
Net capital	17.6	23.3	23.3	47.0	47.9	24.0
Others	1.6	14.7	9.9	-0.5	27.1	135.6
Reserve money	465.0	522.0	677.0	707.0	704.9	827.3
Currency outside banks	287.6	357.3	431.9	466.0	514.0	579.0
Currency in banks	15.5	15.7	17.0	24.5	30.2	40.2
Bank deposits	161.9	149.0	228.1	216.5	160.8	208.2
Deposits of other banking institutions	3.4	0.3	0.0	0.1	0.0	0.0
Resident deposits in foreign currency	1.0	0.0	0.0	0.1	0.0	0.0

Sources: Central Bank of Madagascar; and Fund staff estimates.

Table 25. Madagascar: Summary Accounts of Commercial Banks, 1999-2004
(In billions of Malagasy francs, unless otherwise indicated; end of period)

	1999	2000	2001	2002	2003	2004
Net bank liquidity	279.6	307.6	370.6	412.8	405.4	613.5
Net international reserves	131.2	167.2	156.7	189.9	228.4	392.7
Long-term foreign liabilities	-14.0	-12.3	-23.0	-12.7	-17.3	-19.9
Reserves	177.4	164.7	245.1	241.0	190.9	248.4
Currencies in banks	15.5	15.7	17.0	24.5	30.2	40.2
Deposits at central bank	161.9	149.0	228.1	216.5	160.8	208.2
Net recourse to central bank	15.0	11.9	8.1	5.4	-3.4	7.7
Recourse to central bank	15.0	11.9	8.1	5.4	-3.4	-2.3
Reverse auctions	0.0	0.0	0.0	0.0	0.0	10.0
Net domestic assets	393.9	459.3	582.8	614.9	785.1	903.7
Claims on government (net)	68.0	80.1	168.0	224.3	276.2	141.0
Credit to government	96.2	121.3	236.5	305.3	359.7	271.1
Government deposits	-28.2	-41.2	-68.5	-81.0	-83.5	-130.1
Of which : deposits of administrative agencies	-26.5	-39.4	-66.6	-78.3	-79.9	-127.1
Claims on private sector	387.5	460.7	500.2	486.9	594.9	814.7
Net capital	-89.2	-103.6	-124.1	-145.3	-158.3	-173.7
Other items (net)	27.6	22.1	38.8	49.0	72.3	121.7
Currency valuation adjustment	-1.9	-0.2	-0.1	0.1	-0.3	1.8
Other	29.5	22.3	38.9	48.9	72.6	119.9
Deposits	643.2	733.1	918.9	992.2	1,155.1	1,488.8
Demand deposits	423.2	445.8	614.8	659.6	662.8	811.1
Time deposits	220.0	287.3	304.1	332.7	274.9	328.4
Foreign currency	121.9	168.3	154.7	175.8	217.4	349.3
In millions of SDRs	67.8	98.5	92.9	100.5	120.4	120.6
Short-term bonds	30.4	33.9	34.5	35.5	35.4	28.4

Sources: Central Bank of Madagascar; and Fund staff estimates.

Table 26. Madagascar: Foreign Reserve Assets and Liabilities of the Central Bank, 1999-2004
(In millions of SDRs, unless otherwise indicated; end of period)

	1999	2000	2001	2002	2003				2004			
	Dec.				Mar.	Jun.	Sep.	Dec.	Mar.	Jun.	Sep.	Dec.
Foreign assets	165.5	218.7	317.5	265.0	269.3	279.2	296.1	281.4	326.8	288.2	344.1	328.1
Of which : time deposits	121.7	129.4	258.9	216.7	217.2	190.7	183.1	216.1	212.4	203.4	257.0	0.0
Foreign liabilities	48.0	81.6	102.8	101.8	100.5	100.7	109.1	106.0	130.9	127.6	127.8	134.6
Nonresident deposits	2.1	1.4	0.9	2.7	2.9	3.8	2.6	0.9	3.8	1.9	3.7	0.0
International organizations	0.2	0.2	0.1	0.4	0.3	0.9	0.5	0.5	0.3	0.3	0.1	0.4
IMF	45.8	80.0	101.4	98.7	97.3	96.0	105.9	104.6	126.8	125.4	124.1	134.1
External payments arrears	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net foreign assets	117.5	137.1	214.7	163.3	168.8	178.5	187.0	175.4	195.9	160.6	216.3	193.6
Excluding IMF and arrears	163.3	217.1	316.0	261.9	266.1	274.4	292.9	280.0	322.7	286.0	340.4	327.6
Memorandum item:												
Exchange rate: Malagasy francs per SDR	8,985	8,538	8,328	8,746	8,848	8,557	8,719	9,027	13,080	15,167	15,233	14,478

Source: Central Bank of Madagascar.

Table 27. Madagascar: Structure of Market Interest Rates, 2000-04
(In percent per annum)

	Central Bank			Money Market				Treasury Bills					
								Primary market					
	Base rate	Lending 2-10 days	Overnight lending	Lending on bid	Deposits on bid	Inter-bank	Open market	4 weeks	12 weeks	24 weeks	52 weeks	Weighted average	Secondary market (Weighted average)
	(End of period)							(Weighted period average)					
2000	12.00	14.50	16.50	...	...	16.61	16.51	12.82	15.27	15.40	...	14.56	12.58
2001	10.50	13.00	15.00	...	...	9.90	...	7.31	10.91	10.98	...	9.98	8.21
2002	9.00	11.50	13.50	...	8.92	9.02	10.34	10.56	11.28	12.29	...	11.39	5.26
2003	7.00	9.50	11.50	...	...	9.89	11.84	10.86	11.88	12.98	13.75	12.08	9.75
2004	16.00	2.50	18.50	13.03	15.97	11.92	11.34	12.66	12.27	12.79	13.19	12.78	11.18
2003													
Mar.	7.00	9.50	11.50	…	…	9.50	…	11.65	12.73	13.38	14.27	12.91	11.26
Jun.	7.00	9.50	11.50	…	…	11.00	12.23	11.27	12.26	13.09	13.80	12.43	10.62
Sep.	7.00	9.50	11.50	…	…	…	…	10.14	10.78	12.11	12.75	10.82	9.88
Dec.	7.00	9.50	11.50	…	…	9.70	11.47	10.02	10.56	11.65	12.47	10.76	10.21
2004													
Mar.	7.00	9.50	11.50	…	…	10.50	…	9.96	10.40	11.18	12.13	10.92	9.30
Jun.	12.00	14.50	16.50	…	…	10.49	11.51	10.16	10.40	11.25	12.14	10.70	10.79
Sep.	16.00	18.50	20.50	…	15.65	13.00	…	14.31	13.46	13.92	14.21	14.21	12.12
Dec.	16.00	18.50	20.50	…	17.22	16.20	…	17.2	17.6	17.2	17.6	17.3	15.9

Source: Central Bank of Madagascar.

Table 28. Madagascar: Structure of Commercial Bank Interest Rates, 2000-2004
(In percent per annum)

	Base Rate	Lending Rates		Deposit Rates		Lending Rates		Deposit Rates	
		Short term	Medium term	Time and > one year	Foreign currency	Short term	Medium term	Time and > one year	Foreign currency
		(Midpoint of the range; end of period) [1]				(Midpoint of weighted averages) [2]			
2000	13.42	18.75	17.25	9.00	2.60	20.25	14.93	10.99	1.67
2001	12.10	16.88	15.44	6.50	2.60	17.82	13.98	7.37	1.79
2002	11.88	16.88	15.94	7.03	2.60	16.02	13.24	6.41	1.41
2003	10.92	15.13	14.38	5.83	2.60	14.94	12.61	6.61	1.36
2004	14.48	17.00	15.95	8.47	1.75	15.92	14.17	6.65	0.93
2002									
I	11.50	16.63	15.44	7.50	2.60	16.05	12.90	6.62	1.51
II	12.47	16.63	15.34	7.00	2.60	15.81	12.90	6.68	1.74
III	10.88	16.88	15.34	7.03	2.60	16.14	13.52	6.54	1.22
IV	11.88	16.88	15.94	7.03	2.60	16.10	13.65	5.83	1.17
2003									
I	10.08	15.13	15.21	7.01	2.60	14.88	13.26	6.94	0.96
II	10.99	15.13	14.38	6.87	2.60	14.88	12.44	6.66	1.40
III	10.49	15.13	14.38	5.91	2.60	15.13	12.53	6.48	2.09
IV	10.92	15.13	14.38	5.83	2.60	14.88	12.21	6.38	0.99
2004									
I	10.51	15.88	14.38	6.13	2.60	13.83	12.82	6.13	0.83
II	12.51	16.57	16.13	6.75	2.60	15.85	13.55	6.15	0.93
III	14.01	16.10	15.70	7.25	2.60	16.37	14.59	6.39	1.05
IV	14.48	17.00	15.95	8.47	1.75	17.64	15.72	7.95	0.91

Source: Central Bank of Madagascar.

[1] On new business only; reported as a range by commercial banks.

[2] Calculated by the banks on their outstandings; the midpoint is a simple average of the highest and lowest rates reported by the banks.

Table 29. Madagascar: Issues and Outstandings of Treasury Bills, 2000-2004
(Nominal values; in billions of Ariary, unless otherwise indicated)

		Total Issue							*Of Which*: Nonbanking Sector [1]				Total Outstanding		*Of Which*: Nonbanking Sector		
		Treasury preannouncement [2]			Total bid	Percentage	Bids accepted	Percentage	Total bid	Percentage	Bids accepted	Percentage	Net purchases	Stock at end of period	Net purchases	Stock at end of period	Percentage of total
		Total	*Of which:* competitive market [3]	Percentage													
		(1)	(1a)	(1a)/(1)	(2)	(2)/(1)	(3)	(3)/(2)	(4)	(4)/(1a)	(5)	(5)/(4)	(6)	(7)	(8)	(9)	(9)/(7)
2000		362.0	310.0	85.6	885.1	285.5	753.9	85.2	336.2	108.4	287.3	85.5	60.3	190.1	24.1	104.7	55.1
2001		501.0	421.0	84.0	1,403.1	333.3	1,107.3	78.9	383.6	91.1	287.8	75.0	151.5	341.7	23.9	128.6	37.7
2002		508.0	444.0	87.4	690.5	155.5	660.7	95.7	165.1	37.2	146.7	88.9	67.7	409.4	-14.2	114.5	28.0
2003		1,577.0	1,448.0	91.8	1,900.9	131.3	1,735.9	91.3	357.5	24.7	318.7	89.2	184.3	593.6	93.0	207.4	34.9
2004		1,436.2	1,303.8	90.8	1,826.5	140.1	1,603.5	87.8	494.7	37.9	452.1	91.4	20.6	614.3	109.2	316.6	51.5
2003	Jan.	244.0	226.0	92.6	289.9	128.3	282.6	97.5	53.7	23.8	51.4	95.6	64.0	473.3	13.7	128.2	27.1
	Feb.	91.0	82.0	90.1	110.6	122.7	103.4	93.5	17.5	21.4	15.0	85.5	21.7	495.0	4.8	133.0	26.9
	Mar.	69.0	60.0	87.0	115.6	132.9	99.0	85.6	17.6	29.4	12.9	73.1	34.9	529.9	12.3	145.3	27.4
	Apr.	298.0	286.0	96.0	303.2	316.0	299.3	98.7	91.7	32.1	89.5	97.6	8.6	538.5	8.6	153.9	28.6
	May.	100.0	88.0	88.0	124.9	141.9	115.1	92.1	42.6	48.4	36.8	86.4	18.3	556.7	17.3	171.2	30.8
	Jun.	68.0	62.0	91.2	94.6	103.8	76.6	81.0	15.7	25.3	9.7	61.9	9.8	566.5	11.2	182.5	32.2
	Jul.	165.0	156.0	94.5	174.2	111.6	173.1	99.4	19.5	12.5	18.8	96.5	7.4	573.9	-5.0	177.4	30.9
	Aug.	103.0	94.0	91.3	183.1	194.7	120.6	65.9	24.2	25.7	13.0	53.8	-1.5	572.4	28.3	205.7	35.9
	Sep.	141.0	127.0	90.1	157.7	124.2	137.4	87.1	12.9	10.1	11.2	87.4	-3.3	569.1	-27.1	178.7	31.4
	Oct.	106.0	94.0	88.7	109.2	116.1	107.5	98.5	18.6	19.8	18.4	98.8	-3.4	565.7	14.4	193.1	34.1
	Nov.	79.0	72.0	91.1	113.4	157.5	103.5	91.3	20.3	28.1	19.4	95.9	23.6	589.4	0.7	193.7	32.9
	Dec.	113.0	101.0	89.4	124.5	123.3	117.8	94.6	23.2	23.0	22.7	97.7	4.3	593.6	13.7	207.5	34.9
2004	Jan.	139.0	124.0	89.2	273.8	220.8	212.3	77.5	35.8	28.8	21.9	61.2	71.3	664.9	2.4	209.8	31.6
	Feb.	122.0	110.0	90.2	178.2	162.0	150.7	84.6	27.0	24.5	19.8	73.5	25.4	690.3	13.5	223.4	32.4
	Mar.	136.0	124.0	91.2	176.4	142.3	139.3	79.0	30.7	24.8	20.1	65.5	2.4	692.8	0.7	224.0	32.3
	Apr.	147.0	132.0	89.8	266.7	202.0	219.7	82.4	86.1	65.2	84.4	98.0	20.3	713.1	-0.6	223.5	31.3
	May.	104.0	92.0	88.5	139.1	151.2	115.4	83.0	36.7	39.9	32.5	88.5	-16.6	696.5	-0.7	222.8	32.0
	Jun.	92.0	80.0	87.0	123.8	154.8	110.9	89.6	24.1	30.2	23.9	98.8	-2.3	694.2	12.7	235.5	33.9
	Jul.	129.0	114.0	88.4	102.6	90.0	98.0	95.5	47.1	41.3	47.1	100.0	-61.3	632.9	24.0	259.5	41.0
	Aug.	71.0	65.0	91.5	62.1	95.6	60.8	98.0	27.3	42.0	26.0	95.3	-31.9	600.9	13.6	273.1	45.4
	Sep.	84.0	78.0	92.9	100.8	129.2	100.3	99.5	30.1	38.6	29.6	98.3	5.6	606.6	-4.1	268.9	44.3
	Oct.	128.0	122.0	95.3	124.5	102.0	123.6	99.3	35.1	28.8	34.2	97.5	1.0	607.6	25.7	294.7	48.5
	Nov.	105.0	99.0	94.3	138.2	139.6	132.6	95.9	48.4	48.9	46.7	96.5	32.6	640.1	26.2	320.9	50.1
	Dec.	179.2	163.8	91.4	140.3	85.6	139.9	99.7	66.4	40.5	66.0	99.4	-25.9	614.2	-4.3	316.7	51.6

Source: Central Bank of Madagascar.

[1] Competitive market only, since May 16, 1997.

[2] Since May 16, 1997 only.

[3] The noncompetitive segment of the market is open only to intermediaries in the secondary market; bills are sold at a price equal to the average of bids in the competitive auction market.

Table 30. Madagascar: Summary Balance of Payments, 1999-2004
(In millions of SDRs, unless otherwise indicated)

	1999	2000	2001	2002	2003	2004 Prel.
Current account	-154.3	-160.2	-62.1	-149.6	-191.7	-311.3
Goods and services	-217.1	-209.6	-115.2	-170.8	-351.1	-480.5
Trade balance	-122.3	-78.5	11.6	-36.4	-135.9	-303.2
Exports	425.9	628.6	757.9	375.0	672.8	646.4
Imports	-548.2	-707.1	-746.3	-411.4	-808.7	-949.6
Net services	-94.8	-131.1	-126.8	-134.4	-215.3	-177.3
Services, receipts	238.5	276.0	275.4	173.0	229.3	285.3
Services, payments	-333.3	-407.0	-402.2	-307.4	-444.6	-462.6
Income	-31.1	-53.3	-61.6	-53.0	-57.0	-53.5
Receipts	15.1	16.6	18.8	20.1	11.7	10.0
Investment income	5.9	0.2	10.1	7.1	6.1	5.4
Other	9.2	16.4	8.7	13.0	5.6	4.6
Of which: compensation of employees	8.5	8.5	8.5	12.8	5.6	4.6
Payments	-46.2	-69.9	-80.4	-73.1	-68.7	-63.5
Investment income	-45.9	-66.7	-71.4	-73.1	-63.3	-57.9
Of which: dividends	-6.4	-22.4	-30.0	-28.4	-22.6	-15.7
interest	-39.5	-44.3	-41.4	-44.7	-40.7	-42.2
Current transfers	93.9	102.6	114.7	74.2	216.4	222.7
Government	25.1	25.5	25.0	6.2	102.0	112.8
Budget aid	20.1	16.5	36.7	22.1	91.6	99.1
Other (net) [1]	5.0	9.0	-11.7	-15.9	10.4	13.7
Private	68.8	77.1	89.7	68.0	114.4	109.9
Capital and financial account	135.9	119.7	179.5	70.2	165.3	287.3
Capital transfers	94.2	87.0	88.6	44.6	63.8	121.9
Government	94.2	87.0	88.6	44.6	63.8	121.9
Project grants	94.2	87.0	88.6	44.6	63.8	121.9
Financial account	41.7	32.7	90.9	25.6	28.9	144.4
Direct investment	42.7	52.9	73.1	6.4	9.1	30.0
Of which: privatization receipts	15.4	5.3	...	...	...	...
Other	-1.0	-20.2	17.8	19.2	19.8	114.4
Government	-5.8	13.9	18.5	48.2	47.6	135.9
Drawings	71.3	85.6	87.2	120.3	121.0	203.9
Of which: project drawings	71.3	46.2	60.4	54.6	83.5	153.7
budgetary support		39.4	26.8	65.7	37.5	50.2
Amortization	-77.1	-71.7	-68.7	-72.1	-73.4	-68.2
Private sector (net)	2.4	-9.1	-4.5	-7.9	-7.0	-9.7
Banks (net)	2.4	-25.0	-5.0	16.8	-20.8	-11.8
Other (including errors and omissions) [2]	8.5	-53.4	-97.9	-20.1	72.6	21.0
Overall balance	-9.9	-93.9	19.5	-99.5	-26.4	-24.2

Table 30. Madagascar: Summary Balance of Payments, 1999-2004 (Concluded)
(In millions of SDRs, unless otherwise indicated)

	1999	2000	2001	2002	2003	2004 Prel.
Financing	9.9	93.9	-19.5	99.5	-26.4	-24.2
Net foreign assets (increase -)	-43.7	-5.7	-98.3	31.4	-12.0	-19.6
Use of Fund credit (net)	9.7	34.2	21.4	8.7	5.8	29.5
Purchase	13.6	38.0	22.7	11.4	11.4	34.9
Repurchases	-3.8	-3.8	-1.3	-2.7	-5.6	-5.4
Other assets (net, increase -)	-43.7	-5.7	-98.3	31.4	-17.8	-49.1
Net change in arrears (excluding the central bank)	3.1	5.8	1.6	1.5	-9.5	...
Arrears accumulation	3.1	0.0	...	...	...	...
Repayment of arrears	0.0	-5.7	...	...	...	...
Rescheduling of arrears	0.0	0.0	...	...	...	...
Debt relief and cancellation	40.8	59.6	55.8	57.9	47.8	43.7
Memorandum items:						
External current account / GDP (in percent)						
Excluding net official transfers	-6.6	-6.3	-2.4	-4.6	-7.5	-14.4
Including net official transfers	-5.7	-5.5	-1.7	-4.4	-4.9	-10.6
Scheduled debt service [3] (before debt relief)	17.5	13.6	...	...	...	...
After debt relief 8/	12.0	0.0	...	...	...	...
Actual external debt service 9/		0.0	...	...	...	...
Scheduled debt service [3] (after debt relief)	11.4	6.9	...	...	...	...
Public sector scheduled debt service [4] (before relief)	34.9	32.3	...	...	...	...
Annual percentage changes						
Export volume	10.6	47.6	20.6	-50.5	64.0	-10.6
Import volume	10.6	29.1	5.5	-44.9	74.7	7.3
Real GDP	4.7	4.8	6.0	-12.7	9.8	5.3
Gross official reserves	165.3	218.7	317.5	265.0	284.4	333.5
(weeks of goods and nonfactor services imports)	9.8	10.2	14.3	19.2	11.9	11.7
(excluding privatization receipts)	14.4	15.7	...	...	...	...
Exchange rates						
Ariary/SDR (period average)	1,717.2	1,790.2	1,678.2	1,754.9	1,734.8	2,772.1
Ariary/USD (period average)	1,256.2	1,357.4	1,318.3	1,318.5	1,240.6	1,870.8

Sources: Central Bank of Madagascar; and Fund staff estimates.

[1] Other official grants less payments due to scholarships and contributions to international organizations.
[2] Includes commercial credits received or granted.
[3] In percent of exports of goods and nonfactor services, before rescheduling.
[4] In percent of government revenue, before rescheduling.

Table 31. Madagascar: Composition of Exports, f.o.b., 1999-2004
(Unless otherwise indicated, values in millions of SDRs, volumes in thousands of tons, and unit values in SDRs per kilogram)

	1999	2000	2001	2002	2003	2004 Prel.
Coffee						
Value	21.9	6.2	2.5	2.2	3.1	3.0
Volume	27.9	13.0	6.2	5.7	7.1	7.8
Unit price	0.8	0.5	0.4	0.4	0.4	0.4
Vanilla						
Value	20.2	44.2	128.8	90.2	140.1	84.0
Volume	1.3	1.1	1.6	0.8	1.0	0.7
Unit price	15.2	39.8	78.5	107.7	134.5	113.7
Cloves						
Value	12.0	34.5	75.4	22.8	20.5	19.1
Volume	7.8	14.9	20.2	10.0	15.8	12.6
Unit price	1.5	2.3	3.7	2.3	1.3	1.5
Pepper						
Value	1.7	1.1	1.1	1.0	1.3	1.2
Volume	0.6	0.6	0.7	0.8	1.1	1.2
Unit price	2.8	1.8	1.5	1.3	1.3	1.0
Shellfish						
Value	57.8	60.8	72.7	67.8	38.8	33.7
Volume	12.2	11.5	12.0	11.3	8.1	6.1
Unit price	4.7	5.3	6.1	6.0	4.8	5.5
Sugar						
Value	9.0	4.4	5.4	0.3	0.7	5.6
Volume	31.2	14.0	21.0	0.8	1.7	12.4
Unit price	0.3	0.3	0.3	0.4	0.4	0.4
Meat						
Value	0.0	0.1	0.0	0.0	0.0	0.0
Volume	0.0	0.1	11.4	0.0	0.0	0.0
Unit price	1.1	0.8	0.0	5.9	0.0	0.0
Cocoa						
Value	0.9	2.0	2.5	4.9	0.7	4.3
Volume	1.0	2.3	3.2	1.2	0.6	4.3
Unit price	0.9	0.9	0.8	4.0	1.2	1.0
Cotton cloth						
Value	21.5	27.6	17.5	5.3	3.7	4.9
Volume	4.4	4.4	6.0	1.1	0.7	1.4
Unit price	4.9	6.3	2.9	4.6	5.4	3.4
Sisal						
Value	1.5	1.5	2.7	4.9	1.2	1.7
Volume	4.6	5.3	11.2	12.0	4.0	4.7
Unit price	0.3	0.3	0.2	0.4	0.3	0.4

Table 31. Madagascar: Composition of Exports, f.o.b., 1997-2004 (Concluded)
(Unless otherwise indicated, values in millions of SDRs, volumes in thousands of tons, and unit values in SDRs per kilogram)

	1999	2000	2001	2002	2003	2004 Prel.
Petroleum products						
Value	9.8	17.2	20.0	7.3	22.5	12.0
Volume	152.3	163.2	103.4	67.9	207.3	112.9
Unit price	0.1	0.1	0.2	0.1	0.1	0.1
Chromite						
Value	3.3	4.2	5.1	2.7	2.1	5.9
Volume	96.2	91.8	125.0	62.4	44.5	83.5
Unit price	0.0	0.0	0.0	0.0	0.0	0.1
Graphite						
Value	3.2	4.4	3.1	2.7	5.2	3.1
Volume	9.2	13.7	9.6	8.4	14.0	7.9
Unit price	0.4	0.3	0.3	0.3	0.4	0.4
Essence of cloves						
Value	3.1	4.2	9.2	4.8	2.5	3.1
Volume	1.2	1.3	1.1	1.2	0.9	1.4
Unit price	2.7	3.3	8.2	4.1	2.8	2.1
Other items (including reexports)						
Value	96.0	168.3	144.7	80.0	177.9	129.1
Volume	1.0	1.7	...	...	...	...
Unit price	96.6	93.8	...	...	...	...
Exports of the export processing zone (EPZ)						
Value	163.8	248.1	267.2	78.1	252.7	335.9
Volume	...	65.3	111.3	28.9	84.2	61.1
Unit price	...	3.8	2.4	2.7	3.0	5.5
Total value	425.9	628.6	757.9	375.0	672.8	646.4
(percentage change)	10.6	47.6	20.6	-50.5	79.5	-3.9
Memorandum items:						
Traditional exports [1]	55.9	85.9	207.8	116.2	165.0	107.3
In percent of total	13.1	13.7	27.4	31.0	24.5	16.6
Nontraditional exports [2]	78.9	81.5	100.7	88.2	51.2	57.2
In percent of total	18.5	13.0	13.3	23.5	7.6	8.9
Manufactured exports [3]	291.1	461.2	449.3	170.6	395.4	482.2
In percent of total	68.4	73.4	59.3	45.5	67.8	74.6

Sources: Central Bank of Madagascar; and Fund staff estimates.

[1] Value; comprises coffee, vanilla, cloves, and pepper.

[2] Value; comprises cotton cloth, petroleum, other items, and EPZ exports.

[3] Value; comprises EPZ exports, cotton cloth, petrol, and other items.

Table 32. Madagascar: Composition of Imports, c.i.f., 1999-2004

	1999	2000	2001	2002	2003	2004
			(In millions of SDRs)			
Food	33.5	58.4	65.8	46.2	83.4	60.6
Rice	9.5	30.7	36.8	32.3	34.7	25.2
Other	24.0	27.7	29.0	13.9	48.7	35.4
Energy (petroleum)	90.2	161.0	131.8	99.2	150.6	145.2
Equipment goods	117.1	126.6	128.7	68.8	155.8	245.9
Raw materials and spare parts	97.6	123.1	103.1	75.7	157.7	181.8
Consumer goods	112.7	85.4	103.9	70.1	144.6	148.5
Other imports (including EPZ) [1]	193.7	278.1	344.8	124.2	259.4	337.7
Total imports, c.i.f.	644.9	832.5	878.1	484.0	951.4	1,119.6
Total imports, f.o.b.	548.2	707.6	746.3	411.4	808.7	949.6
			(In percent of total imports, c.i.f.)			
Food	5.2	7.0	7.5	9.5	8.8	5.4
Rice	1.5	3.7	4.2	6.7	3.6	2.3
Other	3.7	3.3	3.3	2.9	5.1	3.2
Energy (petroleum)	14.0	19.3	15.0	20.5	15.8	13.0
Equipment goods	18.2	15.2	14.7	14.2	16.4	22.0
Raw materials and spare parts	15.1	14.8	11.7	15.6	16.6	16.2
Consumer goods	17.5	10.3	11.8	14.5	15.2	13.3
Other imports (including EPZ) [1]	30.0	33.4	39.3	25.7	27.3	30.2
Total imports, c.i.f.	100.0	100.0	100.0	100.0	100.0	100.0

Sources: Central Bank of Madagascar; and Fund staff estimates.

[1] Includes the imports of the enterprises set up in the export processing zone (EPZ) and enterprises under special tax regimes (ARD).

Table 33. Madagascar: Direction of Trade, 1999-2003 [1]
(In percent of total)

	1999	2000	2001	2002	2003
Exports, f.o.b.	100.0	100.0	100.0	100.0	100.0
European Union	43.3	46.5	27.4	31.3	36.0
Of which : France	34.5	39.8	21.6	22.8	31.2
Other Europe	0.4	1.4	0.5	1.5	1.7
United States	5.4	22.5	15.5	13.7	26.1
Asia and the Middle East	17.1	11.8	14.2	18.0	10.1
Of which : Japan	1.4	0.8	3.9	5.9	3.1
Africa	9.2	4.5	9.2	10.4	5.7
Of which : Mauritius	4.1	2.3	4.8	5.5	2.3
Réunion (France)	3.2	1.6	3.6	2.7	2.4
Other countries	24.6	13.3	33.3	25.1	20.3
Imports, c.i.f.	100.0	100.0	100.0	100.0	100.0
European Union	38.9	18.8	21.9	25.9	24.5
Of which : France	26.8	14.6	16.9	20.1	18.3
Other Europe	0.8	0.5	0.7	0.7	1.0
United States	3.9	5.9	3.4	3.5	3.2
Asia and the Middle East	27.5	23.3	31.1	30.6	28.8
Of which : Iran, Islamic Republic of	0.2	0.0	0.2	0.0	0.1
China	8.7	6.9	6.8	8.3	11.2
Japan	6.6	2.9	4.3	5.4	3.1
Africa	9.1	6.0	3.7	7.3	4.5
Of which : Mauritius	3.2	1.5	2.3	3.7	2.9
Réunion (France)	0.1	0.1	0.1	0.2	0.3
South Africa	…	…	…	…	…
Other countries	19.8	45.6	39.1	32.0	37.9

Source: Central Bank of Madagascar.

[1] Problems with the classification of local purchases and sales of export processing zone enterprises prevented the authorities from providing consistent export data for 1999 and import data for 1999 and 2000.

Table 34. Madagascar: Balance of Services, 1999-2004
(In millions of SDRs, unless otherwise indicated)

	1999	2000	2001	2002	2003	2004 Prel.
Credit	253.7	292.5	294.2	193.1	241.0	295.3
Freight and insurance on goods	4.1	5.8	6.8	2.8	4.9	5.7
Other transport	36.4	33.1	37.4	29.8	37.1	60.0
Travel	72.9	91.8	90.2	27.9	54.0	106.0
Investment income	15.1	16.6	18.8	20.1	11.7	10.0
Other services, public	26.5	38.3	60.6	51.3	49.0	45.0
Other services, private	98.7	106.9	80.4	61.2	84.3	68.6
Debit	379.5	476.9	482.6	380.5	513.2	526.4
Freight and insurance on goods	88.3	114.9	113.0	85.0	117.0	151.4
Percent of imports, c.i.f.	12.3	12.5	12.9	17.6	12.0	15.0
Other transport	20.5	43.7	53.9	43.0	50.5	43.5
Travel	81.3	85.1	102.0	70.0	45.6	62.8
Investment income	46.2	69.9	80.4	73.1	68.7	63.5
Interest	39.5	44.3	41.4	44.7	40.7	42.2
Dividends	6.4	22.4	30.0	28.4	22.6	15.7
Other services, public	87.6	96.0	68.0	62.5	99.7	109.0
Government expenditures	17.4	15.4	17.5	20.7	22.7	29.5
Services linked to project loans	51.0	57.3	28.7	30.6	48.9	39.0
Services linked to project grants	19.2	23.3	21.8	11.2	28.1	41.2
Other services, private	55.6	67.3	65.3	46.9	131.7	96.2
Net services	-125.8	-184.4	-188.4	-187.4	-272.2	-314.7
Nonfactor services	-86.0	-136.9	-138.0	-142.7	-223.8	-268.4
Factor services	-39.8	-47.5	-50.4	-44.7	-48.4	-46.3

Sources: Central Bank of Madagascar; and Fund staff estimates.

Table 35. Madagascar: Stock of External Debt, 1999-2004
(In millions of SDRs, unless otherwise indicated)

	1999	2000	2001	2002	2003	2004
Medium- and long-term official debt	2,562.4	2,668.8	2,676.8	2,755.6	2,861.9	3,470.3
Bilateral creditors	1,173.4	1,163.9	1,109.6	1,081.5	1,060.5	1,461.1
Paris Club [1]	1,144.7	1,136.2	1,082.0	1,056.9	1,040.7	1,063.9
Other countries	28.6	27.7	27.6	24.6	19.8	397.2
International organizations	1,386.8	1,502.6	1,561.9	1,669.8	1,795.4	1,995.7
IMF	45.8	80.0	101.4	110.1	115.9	145.4
Others	1,341.0	1,422.7	1,460.5	1,559.7	1,679.5	1,850.3
Of which: World Bank Group	1,020.7	1,094.1	1,135.1	1,232.4	1,342.5	...
African Development Bank	23.5	248.6	9.1	10.4	6.1	...
African Development Fund	194.4	229.5	227.5	225.5	234.8	...
Private creditors	2.3	2.3	5.3	4.3	6.0	13.5
Commercial banks	0.4	2.3	0.1	0.0	0.0	0.0
Others	1.9	0.0	5.2	4.3	6.0	13.5
Total arrears	386.2	455.0	506.4	574.9	604.6	0.0
Paris Club [1]	40.0	89.9	143.8	198.0	241.5	0.0
Other bilateral creditors	312.3	345.3	352.8	368.1	353.8	0.0
International organizations	0.0	0.0	0.0	0.0	0.0	0.0
Private creditors	33.9	19.8	9.8	8.8	9.3	0.0
Total external debt outstanding [2]	2,948.6	3,123.9	3,183.2	3,330.5	3,466.5	3,470.3
Memorandum items:						
Total external debt/GDP (in percent)	108.3	106.4	89.5	97.9	88.7	117.7
Total external debt (in percent of exports of goods and nonfactor services)	437.5	346.8	308.0	611.3	412.6	366.0
Total debt to official creditors after debt relief	2,912.5	3,101.7	3,168.1	3,317.4	3,451.2	3,456.8

Sources: Central Bank of Madagascar; and Fund staff estimates.

[1] Reflects Paris Club flow rescheduling on Naples terms obtained for the period January 1997- July 2000 and assumes that agreements with all Paris Club creditors became effective in 1997.

[2] After traditional debt relief (Naples flow rescheduling of 1997).