INTERNATIONAL MONETARY FUND AND
INTERNATIONAL DEVELOPMENT ASSOCIATION

UNION OF THE COMOROS

Joint IMF/World Bank Debt Sustainability Analysis 2008

Prepared by the staffs of the International Monetary Fund and
the International Development Association

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Comoros is in debt distress. *The debt sustainability analysis (DSA) shows that Comoros would remain in debt distress under the baseline scenario, even in the absence of shocks. In the alternative scenario, which for illustrative purposes assumes an hypothetical access to HIPC/MDRI debt relief within the next 3 years, debt would become manageable, including under a variety of stress tests.*[1]

I. Background

1. **Following cancellation in 2007 of US $34.5 million of arrears to the African Development Bank (AfDB)[2], the stock of Comoros' public external debt declined to 56.7 percent of GDP (US$ 276 million), from 67.4 percent at end-2006.** Eight tenths of the debt stock is owed to multilateral creditors, the largest creditor is the International Development Association (IDA)—which accounts for 45 percent of total debt, followed by the African Development Bank (AfDB)—15 percent, and BADEA—12 percent. Among the bilateral creditors, the Kuwaiti and Saudi Funds jointly account for about 15 percent of the debt stock, compared with 2 percent for France, the only Paris Club creditor. Comoros owes

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[1] This is the second DSA prepared for Comoros using the debt sustainability framework for low-income countries developed jointly by the IMF and the World Bank. The first DSA was prepared in 2006 at the time of the last Article IV consultations. The DSA is based on external and public debt data from the Comorian authorities, and on IMF and World Bank staff estimates; it was produced jointly by Fund and Bank staffs following "Staff Guidance Note on the Application of the Joint Fund-Bank Debt Sustainability Framework for Low-Income Countries (LICs)," October 06, 2008 – http://www-int.imf.org/depts/pdr/Debt/Debt-Sustainability/Low-Income-Country-DSA/SM08317andCorr1.pdf and http://siteresources.worldbank.org/INTDEBTDEPT/PolicyPapers/21952151/39748MainExt.pdf.

[2] The African Development Bank cancelled 99 percent of Comoros arrears to the institution under its Post Conflict Country Facility, with contributions from the AfDB itself (69 percent) and France and other donors (30 percent).

no debt to the IMF. With more than two thirds of the total debt stock denominated in SDR, 12 percent in U.S. dollar, and 16 percent in currencies that are linked to the U.S. dollar, the country's debt situation in local currency is highly vulnerable to fluctuations in the Euro (to which the Comorian Franc is pegged) exchange rate to the U.S. dollar.[3] In 2007, domestic public debt, including unpaid short-term central bank advances to the treasury, amounted to the equivalent of US$16.6 million (3.3 percent of GDP).

Text Table 1. Comoros: External Debt and Arrears, Official Creditors, 2007

	2007		
	Stocks		
Creditors	Total Debt	*of which Arrears*	
	(in millions of U.S dollars)		(in percent of total)
Total	276	15.7	100.0
Multilaterals	225	12.1	81.6
AfDB Group	42.6	0.0	15.4
BADEA	32.0	0.1	11.6
EIB	0.7	0.2	0.3
IDB	12.0	7.0	4.4
OPEC	3.6	3.6	1.3
IFAD	8.7	0.0	3.2
IDA	124.3	0.0	45.0
ARAB MONETARY FUND	1.2	1.2	0.4
Bilaterals	50.9	3.6	18.4
UAE (Abu Dhabi)	1.3	1.3	0.5
France	5.2	0.7	1.9
China	1.4	1.5	0.5
Kuwait Fund	27.7	0.0	10.0
Saudi Fund	14.2	0.0	5.1
Mauritius	1.0	0.0	0.4

Source: Comorian authorities. Data not reconciled with creditor statements.

2. **Progress in clearing external debt arrears has been uneven.** In addition to the AfDB arrears cancellation, the country obtained favorable rescheduling terms in 2007 on

[3] Authorities do not keep record of private sector external debt obligations.

arrears to BADEA (US $26.7 million)[4], the Kuwaiti Fund (US$27.7 million) and the Saudi Funds (US$14.1 million). However, for various reasons, including lack of resources to carry out payments set under the arrears settlement arrangements, the final agreements remain pending in the case of the Islamic Development Bank, the OPEC Fund, the European Investment Bank, the Arab Monetary Fund, the United Arab Emirates, and France. The Comorian authorities have indicated that they remain engaged with these creditors, most of which have reportedly expressed willingness to reach favorable understandings regarding the unsettled arrears situations.

3. **Comoros' NPV-based external debt indicators are above all indicative policy-dependent thresholds** [5] The joint Bank-Fund debt sustainability framework (DSF) for low-income countries classifies Comoros as a "poor performer", reflecting the poor quality of the country's policies and institutions as measured by the 3-year average of the World Bank's CPIA ratings (Table 2).[6] Within this framework, the ratios of all relevant external debt indicators, in NPV terms, were above the indicative policy-dependent thresholds for Comoros at end-2007; in particular, the ratio to exports of goods and services was more than double (271 percent) the threshold. However, debt service ratios to exports and revenues were below relevant indicative thresholds, reflecting mainly the impact of the AfDB arrears cancellation and favorable rescheduling terms (delayed principal repayments) from other creditors.

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[4] Note that new arrears were accumulated by the end-2007 following the rescheduling.

[5] Comoros has not yet benefited from debt relief under the enhanced HIPC Initiative and MDRI. However, because the country has been assessed to have met the Enhanced HIPC Initiative income and indebtedness criteria based on end-2004 data, it could become eligible for HIPC and MDRI debt relief. See "Heavily Indebted Poor Countries (HIPC) Initiative—Issues Related to the Sunset Clause," posted on the IMF Website August 16, 2006.

[6] See "Staff Guidance Note on the Application of the Joint Fund-Bank Debt Sustainability Framework for Low-Income Countries (LICs)," October 06, 2008 – http://www-int.imf.org/depts/pdr/Debt/Debt-Sustainability/Low-Income-Country-DSA/SM08317andCorr1.pdf and http://siteresources.worldbank.org/INTDEBTDEPT/PolicyPapers/21952151/39748MainExt.pdf.

Text Table 2. Policy Dependent Debt Burden Thresholds under the DSF

	Comoros		Thresholds
	End-2006	End-2007	Low Income DSA (Weak Policy) [1]
NPV of debt in percent of			
Exports	390	271	100
GDP	55	40	30
Revenue	406	315	200
Debt service in percent of			
Exports	13	11	15
Revenue	14	13	25

Sources: Comorian authorities; and IMF and World Bank staffs estimates.

[1] Weak policy refers to low income countries whose 3-year average CPIA rating is below 3.25.

II. Underlying DSA Assumptions

4. **Staffs performed a debt sustainability analysis under a baseline and an alternative scenario.** The baseline scenario is identical to the alternative, but without the hypothetical assumption of an HIPC/MDRI debt relief. The alternative scenario is predicated on steady post-conflict economic recovery underpinned by full restoration of inter-island cooperation, good progress on fiscal consolidation, and implementation of key growth-supporting reforms. The scenario also assumes that the completion point under the HIPC Initiative would be reached over the next three years and that Comoros would also benefit from relief under the MDRI. Under such conditions, (i) real GDP growth would gradually pick up from near stagnation in 2007, settling around 4 percent over the medium term; (ii) the primary fiscal balance would steadily improve from a deficit (an average 1.7 percent of GDP on during 2007–11) to a surplus of 0.3 percent of GDP during 2012–27, reflecting improved revenue collection and enhanced control over current expenditure. The scenario also assumes the resumption of external assistance in 2008 in the context of economic programs supported by the IMF under the Emergency Post Conflict Assistance and Exogenous Shocks Facility and, in late 2009, under the Poverty Reduction and Growth Facility. This LIC-DSA assumes that all other arrears, including to Paris Club Creditors, would be rescheduled on respective creditors' standard terms.[7]

5. **The previous external DSA (2006 DSA) for Comoros assumed similar GDP growth rates, but with much more favorable external and fiscal positions** (Text Table 3). Real GDP growth was projected to average 3.5 percent for the first five years (2006–10) and 4 percent for the remainder of the period; the new estimates are 2.4 for 2007–11, and 4 percent for 2012-28. The downward revision of the growth projections in the first five

[7] For Paris club creditors Naples and Cologne terms were assumed for arrears rescheduling and HIPC/MDRI relief simulation respectively.

years reflects weaker than expected growth performance in 2007 on the back of crisis political conditions and more pronounced terms of trade deterioration. The last DSA projected export growth of 16.4 percent on average for the initial five years and 8 percent thereafter, compared with a more modest 10 percent and 3.7 percent on average, respectively, in the new DSA, reflecting less optimistic prospects for world prices of Comoros' key export commodities. The 2006 DSA assumed a current account deficit (including grants) of 5½ percent of GDP on average for (2006–10), whereas the current DSA projects a higher average deficit (9.4 percent of GDP for 2007-2011) driven mainly by high world prices of oil and food. The current account deficits are projected to gradually decline to 6 percent of GDP by the end of 2028. Like the previous one, this DSA assumes that the bulk of the identified fiscal financing requirements will be met with grants. The political crisis of 2007 contributed to a shortfall in government revenues, a fact that underpins lower projected revenue in this DSA compared to the old. Despite these developments, the reduction in the debt stock resulting from arrears cancellation, coupled with favorable rescheduling terms, has improved debt dynamics under the current DSA, compared to the previous DSA.

Text Table 3. Comoros. 2006 and 2008 DSA Comparative Assumptions
(Percent, unless otherwise indicated)

	DSA 2008				DSA 2006				
	2007	2008	2009-11	2012-28	2006	2007	2008	2009-11	2012-26
	Act.	Projection			Act.	Projection			
Real GDP growth (in percent)	0.5	0.5	2.0	4.0	1.2	3.0	4.5	4.3	4.0
Inflation (annual change, average)	4.5	5.9	3.1	3.0	3.8	3.0	3.0	3.0	3.0
Domestic revenue (in percent of GDP)	12.7	12.4	13.0	14.1	14.2	15.7	16.0	16.5	17.0
Domestic primary balance (in percent of GDP)	-2.2	-2.7	-1.3	-0.1	-0.3	1.0	0.9	0.8	0.2
Current account balance (in percent of GDP)	-6.7	-8.7	-10.6	-7.6	-4.5	-6.0	-5.9	-5.2	-5.1
Official grants (in percent of GDP)	8.3	9.1	6.3	7.2	6.4	8.0	9.3	10.0	10.0
Real Export Growth	30.1	5.8	6.5	3.7	…	18.0	14.1	17.0	8.0
Terms of trade	-20.3	-21.2	4.2	0.2	-6.0	...	5.2	4.6	6.5

Sources: Comorian authorities; and IMF and World Bank staffs estimates and projections.

Text Table 4. Comoros: Medium-term Scenarios: Baseline and Alternative, 2007-13

	2007	2008	2009	2010	2011	2012	2013
Baseline scenario[1]							
Real sector			(In units indicated)				
Real GDP (percent change)	0.5	0.5	1.0	2.0	3.0	3.5	4.0
GDP deflator (percent change)	5.2	7.1	6.1	1.4	3.1	3.5	3.5
Nominal GDP (US$ millions)	465.6	539.3	525.0	545.5	581.9	623.4	671.2
Investment (percent of GDP)	10.4	10.5	12.8	13.9	14.5	15.1	15.8
General government			(In percent of GDP)				
Grants	7.6	8.9	5.9	6.1	6.3	6.5	6.7
Domestic revenues	12.7	12.4	12.7	13.0	13.4	13.9	14.3
Domestic primary spending	14.9	15.1	14.3	14.3	14.2	14.2	14.0
Domestic primary balance	-2.2	-2.7	-1.6	-1.3	-0.8	-0.3	0.3
Overall balance (cash basis)	-3.4	-3.4	-2.5	-2.2	-1.7	-1.2	-1.1
Change in arrears	-1.4	-0.8	-0.3	-0.4	-0.5	-0.5	-0.5
External sector			(In percent of GDP)				
Current account balance (incl. grants)	-6.7	-8.7	-10.5	-10.3	-11.0	-10.4	-10.6
Exports of goods and services	14.8	14.4	14.5	14.7	14.8	15.0	15.0
Imports of goods and services	41.6	43.1	41.0	41.8	42.3	42.3	42.8
Official grants and loans	8.3	9.1	6.1	6.3	6.5	6.7	6.9
External debt	57.6	52.2	47.2	44.4	40.7	36.5	32.7
Of which: arrears	3.2	0.0	0.0	0.0	0.0	0.0	0.0
Ext. debt service (in percent of exports of goods and services)	11.4	12.2	7.2	6.0	2.7	4.5	3.9
NPV of ext. debt to exports of goods & services	249.3	235.7	217.7	207.5	193.4	175.3	160.2
Gross international reserves (months of imports)	7.3	5.8	6.3	6.0	5.6	5.2	4.8
Alternative Scenario[2]							
External debt	57.6	52.2	45.9	43.2	17.7	16.4	15.1
Of which: arrears	3.2	0.0	0.0	0.0	0.0	0.0	0.0
Ext. debt service (in percent of exports of goods and services)	11.4	12.2	7.2	6.0	3.7	4.5	3.9
NPV of ext. debt to exports of goods & services	249.3	235.7	217.7	207.5	63.3	58.0	53.7

Sources: Comorian authorities and IMF and World Bank staffs estimates and projections.

[1] It reflects political crisis resolved in 2008, EPCAand ESF approved by Q4 2008, PRGF in place by Q3 2009, external assistance in line with I-PRSP.

[2] Assumes debt relief under HIPC/MDRI in 2011.

Box 1. Macroeconomic Assumptions

Real GDP growth: GDP growth in 2008 is projected to stagnate at 0.5 percent, with a sustained recovery projected to start in 2009 from a growth rate of 1 percent, accelerating gradually to a peak of 4 percent in 2013. For the period of 2014–28, real GDP growth rate averages 4 percent, close to the rate registered in 2005 following the previous secessionist crisis. Growth during the recovery phase through 2012 would be underpinned by a good agricultural supply response to higher food prices, renewed confidence and enhanced political stability; stable terms of trade; and new FDI-led investments, especially in tourism and public infrastructure. Longer-term growth would be driven by enhanced investment in key sectors and by structural reforms aimed at enhancing competitiveness.

Inflation: Average inflation is projected to rise to 5.9 in 2008 from 4.5 in 2007, driven mainly by high oil and fuel prices. In the absence of significant second round effects in 2009, average annual inflation will settle at around 3 percent over the longer-term horizon.

Real exchange rate and terms of trade: After a modest appreciation in 2008, the real effective exchange rate is projected to be broadly stable throughout the remainder of the projection period; the terms of trade are expected to worsen further in 2008, before improving somewhat through 2010, and remaining broadly constant thereafter.

Current account balance: The current account balance (including official transfers) is projected to initially deteriorate from a deficit of 6.7 percent of GDP in 2007 to 10.8 percent in 2011 followed by gradual improvements to about 6 of GDP by 2028. The initial worsening of the current account balance would result from a further deterioration of the terms of trade and strong import growth (especially for investment) outpacing exports. Service export is expected to pick up steadily at an annual average of 10 percent, in response to improved hotel infrastructure when the Galawa and other tourism resorts are completed by 2012, compared with 5 percent during 1998–07.

Government balance: The primary balance (total revenue and grants less non-interest expenditure) is projected to worsen slightly to a deficit of 2.7 percent of GDP in 2008 from 2.2 percent in 2007, and to gradually move into surplus beginning in 2013, as revenue gradually increases and more efforts are made to maintain spending under control.

External assistance, scaling up and concessionality: The framework assumes that up to 2010 external assistance will be exclusively in the form of grants, averaging just under 7 percent of GDP. Over the long-term (2011–28) further assistance will be available, in adequate terms, including from IDA and AfDB.

Domestic borrowing: The scenario assumes no new medium to long-term domestic borrowing beyond Central Bank's short-term cash advances to the treasury.

III. External DSA

A. Baseline Scenario

6. **In the baseline scenario, Comoros' NPV-based debt burden indicators remain above the indicative thresholds for a prolonged period.** Low growth and continued accumulation of payments arrears keep all NPV indicators significantly above the country-specific indicative thresholds for almost a decade, with the ratio of NPV of debt-to-export barely below the threshold by 2028. Any stress test would worsen the situation further. For example, under the stress test defined as a one standard deviation negative shock to historical exports growth, the NPV of debt would reach 378 percent of exports of goods and services in 2010 or three times in excess of the threshold.

7. **However, debt service indicators are for the most part below the relevant thresholds, reflecting mainly the impact of highly favorable terms under the arrears rescheduling arrangements of 2007.** This is illustrated graphically by a characteristic hump-shape for the debt service-to-exports and to-revenue ratios.

B. Alternative Scenario and Stress Tests

8. **In the alternative scenario, with an hypothetical HIPC completion point and MDRI relief assumed over the next three years, Comoros' external debt indicators would improve substantially.** While the savings from the HIPC interim debt relief would be roughly offset by new IMF borrowings (under EPCA and ESF in 2008 and PRGF assumed in 2009), Comoros would greatly benefit from the HIPC and MDRI relief after 2011, when all IDA and AfDB debts, jointly accounting for about 60 percent of the total external debt, are projected to be cancelled. As a result, following the HIPC completion point and additional relief under the MDRI, the NPV of external debt would fall to 84 percent of exports, well below the LIC DSA thresholds and debt service would average about 5 percent of exports.

9. **The debt dynamics under the adjustment scenario would be sustainable under a variety of stress tests.** Under the most extreme test, defined as combined one-half standard deviation shocks to GDP, exports and non debt creating flows, the NPV of debt to-exports ratio briefly breaches the threshold in 2011, but quickly falls below it thereafter. After the shock, the NPV of debt would decline to 64 percent of exports after 2018; and the debt service ratios would remain below relevant thresholds throughout the horizon.

Text Table 5. Comoros: External Debt Indicators, 2008 - 2028
(in percent)

	Indicative thresholds	Baseline Scenario			Alternative Scenario		
		2008	2009-11 [1]	2012-2028 [1]	2008	2009-11 [1]	2012-2028 [1]
NPV of debt-to-GDP	30.0	32.0	32.4	16.8	37.1	30.4	9.8
Debt service to revenue	25.0	14.3	11.7	10.3	14.9	6.5	5.3
NPV of debt-to-revenue	200.0	257.8	248.5	118.5	299.4	235.0	69.2
Debt service-to-exports	15.0	12.3	10.4	9.5	12.8	5.8	4.9
NPV of debt-to-exports	100.0	221.3	220.9	110.0	256.9	208.0	64.0
Memorandum items:							
GDP growth	…	0.5	1.6	3.0	0.5	2.0	4.0
Export growth, f.o.b.	…	6.4	2.2	3.0	6.4	6.8	5.5

Sources: Comorian authorities; and IMF and World Bank staffs estimates and projections.
[1] Simple average.

IV. Public DSA

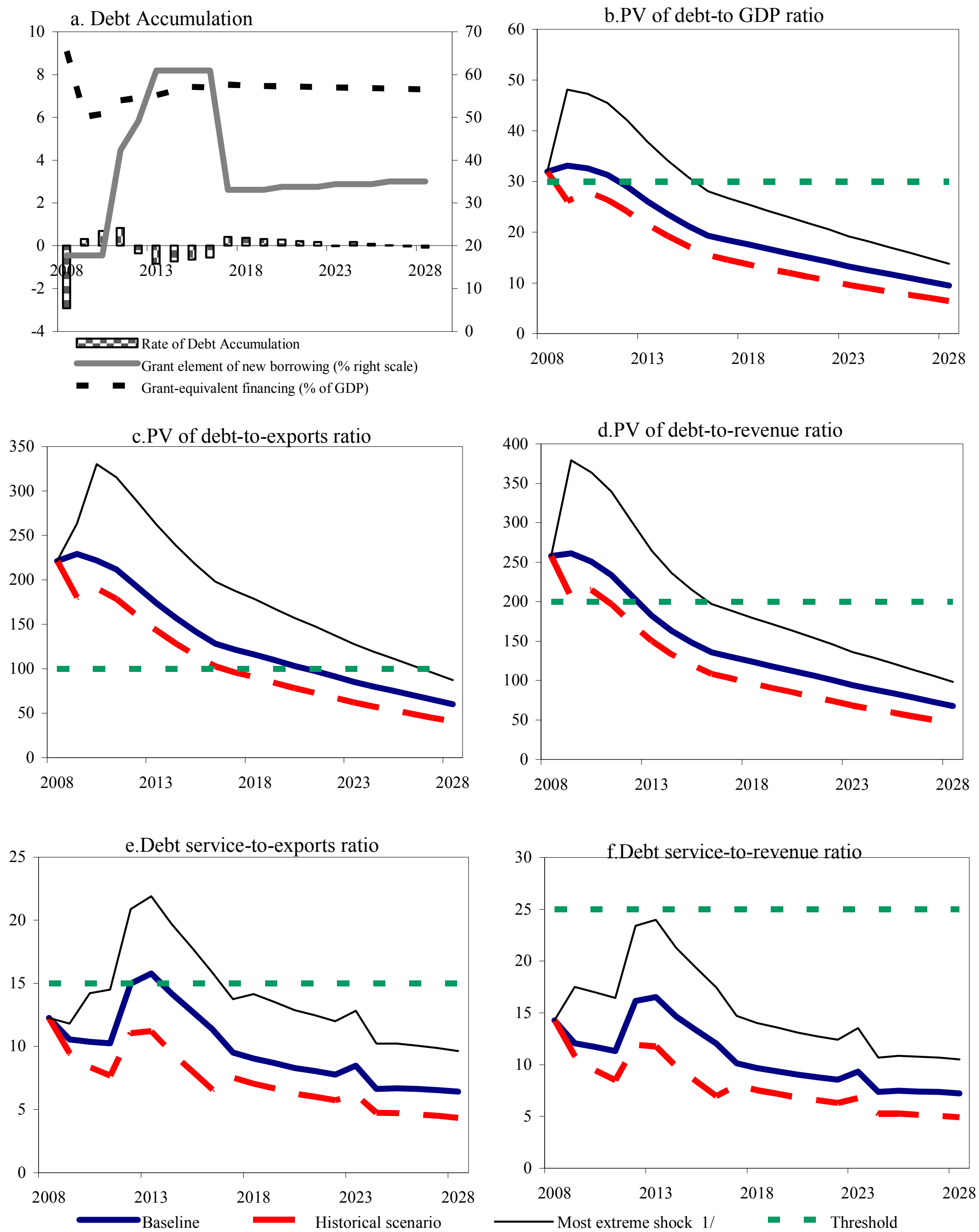
10. **Under the baseline scenario**, **Comoros' debt is above LIC DSA thresholds**. However, under the alternative scenario, higher revenues and spending restraint will permit achievement of a small primary fiscal surplus, anchoring fiscal consolidation and permitting a gradual reduction of domestic arrears. Both NPV and debt service ratios drop faster towards the end of the projection period than at the beginning, reflecting the impacts of primary surpluses in the later years as well as repayment of the bulk of principal due to larger creditors (IDA and AfDB).

V. Debt Distress qualification and Conclusions

11. **In the baseline scenario, Comoros is shown to be in debt distress, as evidenced by recurrent arrears accumulation and prolonged breaches of the NPV of debt thresholds**. As in the previous DSA, under the baseline scenario the external NPV of debt ratios are above country-specific indicative thresholds for most of 2008–24. The updated public DSA for 2008 does not change this assessment. However, an alternative scenario which assumes HIPC/ MDRI debt relief points to a significant improvement of the debt outlook. The debt dynamics are somewhat vulnerable to lower real GDP growth and lower export growth. These vulnerabilities underscore the importance of export diversification and continued reform efforts.

12. **The authorities generally concurred with the thrust of this DSA.** They therefore expressed readiness to take the steps needed to facilitate Comoros' eligibility to the enhanced HIPC Initiative, including steadfast implementation of donor-supported reforms and measures to address weak debt management capacity.

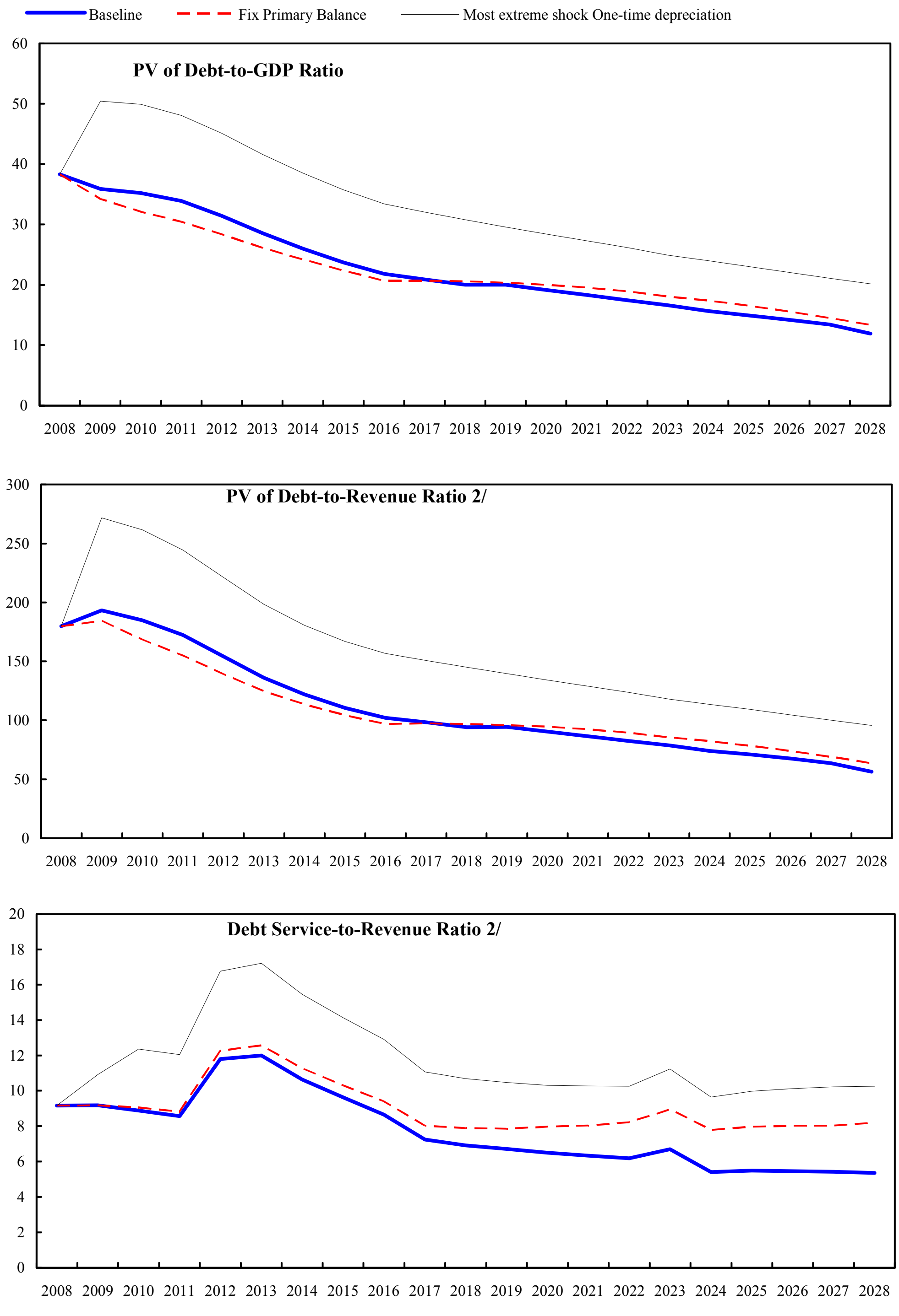
Figure 1. Comoros: Baseline (Non HIPC/MDRI) Indicators of Public and Publicly Guaranteed External Debt under Alternatives Scenarios, 2008-2028 1/



Source: Comorian authorities; and IMF and World Bank staffs projections and simulations.

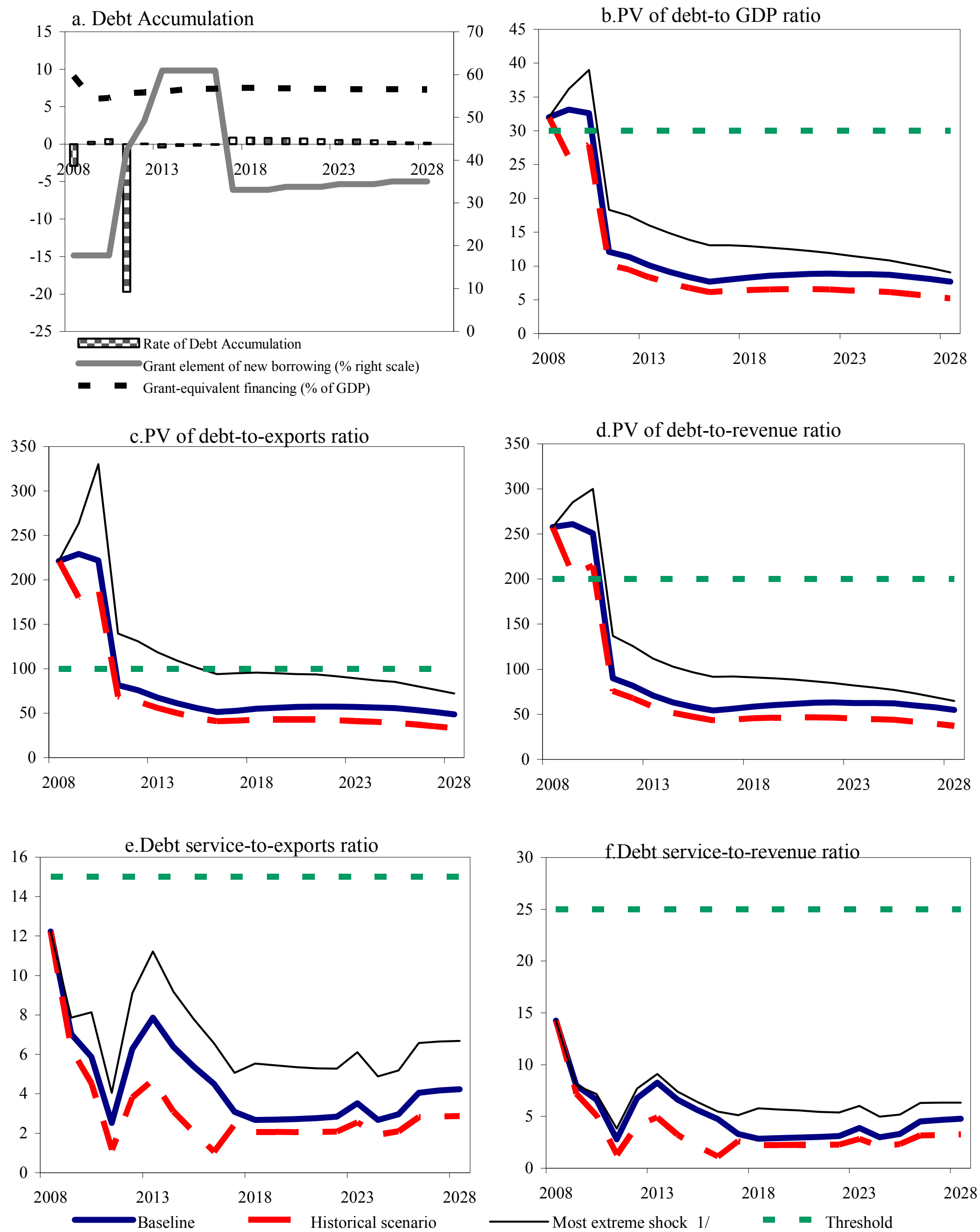
1/ The most extreme stress test is the test that yields the highest ratio in 2018. In figure b. it corresponds to a One-time depreciation shock; in c. to a Exports shock; in d. to a One-time depreciation shock; in e. to a Exports shock and in picture f. to a One-time depreciation shock

Figure 2. Comoros: Baseline (Non HIPC/MDRI) Indicators of Public Debt Under Alternatives Scenarios, 2008-2028 1/



Sources: Comorian authorities; and IMF and World Bank staffs estimates and projections.
1/ The most extreme stress test is the test that yields the highest ratio in 2018.
2/ Revenues are defined inclusive of grants.

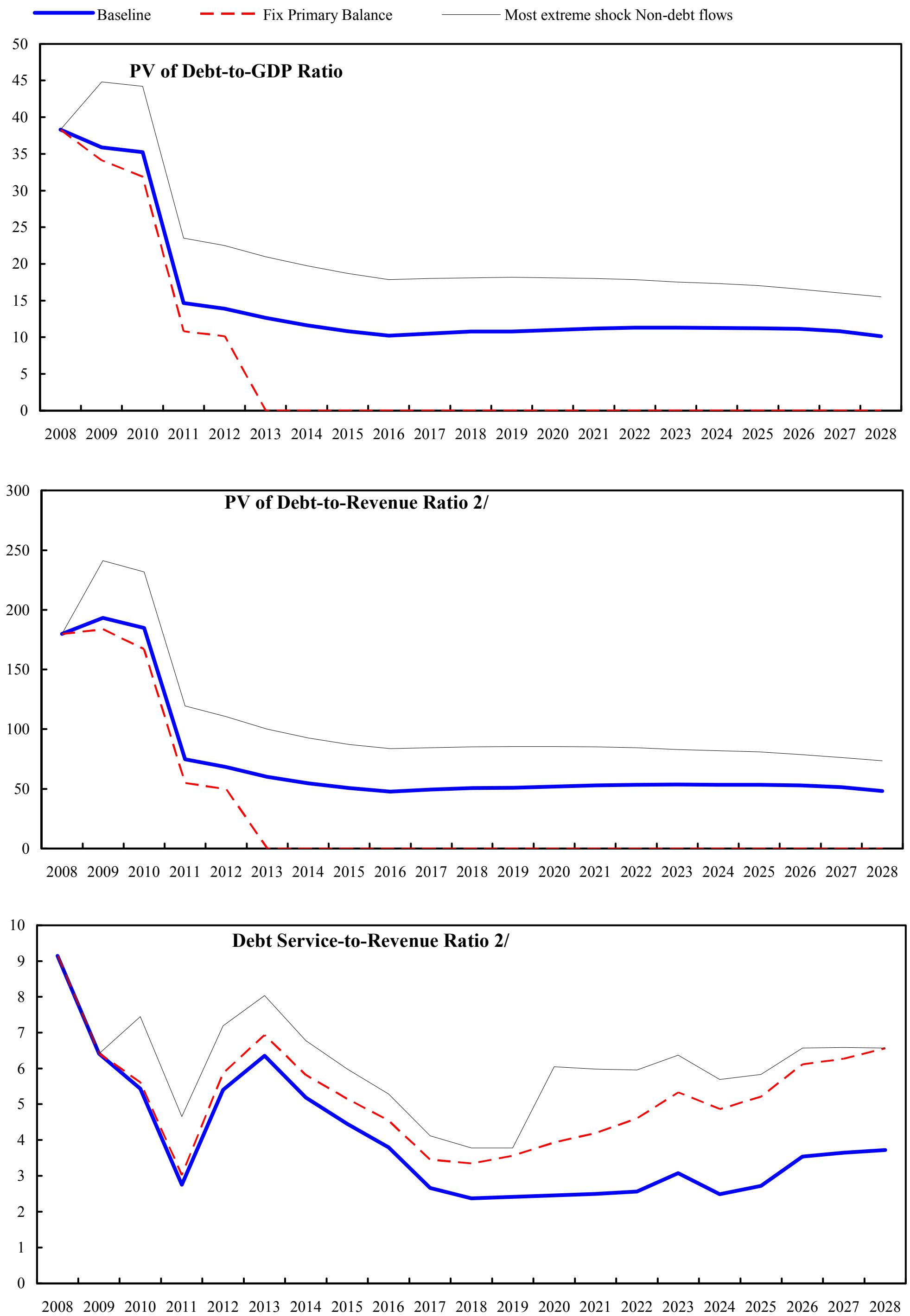
Figure 3. Comoros: Alternative (HIPC/MDRI) Indicators of Public and Publicly Guaranteed External Debt under Alternatives Scenarios, 2008-2028 1/



Source: Comorian authorities; and IMF and World Bank staffs projections and simulations.

1/ The most extreme stress test is the test that yields the highest ratio in 2018. In figure b. it corresponds to a Non-debt flows shock; in c. to a Exports shock; in d. to a Non-debt flows shock; in e. to a Exports shock and in picture f. to a Non-debt flows shock

Figure 4.Comoros: Alternative (HIPC/MDRI) Indicators of Public Debt Under Alternatives Scenarios, 2008-2028 1/



Sources: Comorian authorities; and IMF and World Bank staffs estimates and projections.
1/ The most extreme stress test is the test that yields the highest ratio in 2018.
2/ Revenues are defined inclusive of grants.

Table 1a.: External Debt Sustainability Framework, Baseline Scenario (Non HIPC/MDRI), 2005-2028 1/

(In percent of GDP, unless otherwise indicated)

	Actual			Historical 0 Average 0	Standard Deviation	Projections									
	2005	2006	2007			2008	2009	2010	2011	2012	2013	2008-2013 Average	2018	2028	2014-2028 Average
External debt (nominal) 1/	71.2	69.8	57.6			58.0	53.2	50.6	47.5	43.3	38.8		24.9	12.6	
o/w public and publicly guaranteed (PPG)	71.2	69.8	57.6			58.0	53.2	50.6	47.5	43.3	38.8		24.9	12.6	
Change in external debt	-9.3	-1.4	-12.2			0.5	-4.8	-2.6	-3.1	-4.1	-4.5		-1.6	-1.0	
Identified net debt-creating flows	1.9	3.1	-4.2			6.8	7.9	7.2	7.5	6.9	6.4		5.3	5.3	
Non-interest current account deficit	6.5	5.5	6.3	2.8	3.4	8.2	10.2	9.8	10.5	9.8	10.0		7.7	5.8	7.2
Deficit in balance of goods and services	21.5	24.4	26.9			28.7	26.5	27.1	27.5	27.3	27.9		23.0	16.9	
Exports	14.3	14.2	14.8			14.4	14.5	14.7	14.8	15.0	15.0		15.1	15.8	
Imports	35.8	38.6	41.6			43.1	41.0	41.8	42.3	42.3	42.8		38.1	32.6	
Net current transfers (negative = inflow)	-14.5	-18.3	-19.8	-15.7	2.5	-19.7	-16.1	-16.8	-16.4	-16.9	-17.3		-15.1	-11.2	-13.8
o/w official	-0.4	-1.6	-2.8			-3.6	-0.5	-0.5	-0.5	-0.6	-0.6		-0.6	-0.6	
Other current account flows (negative = net inflow)	-0.4	-0.7	-0.8			-0.8	-0.3	-0.5	-0.7	-0.6	-0.6		-0.2	0.2	
Net FDI (negative = inflow)	-0.1	-0.2	-1.6	-0.4	0.4	-1.6	-2.1	-1.9	-1.8	-1.7	-2.3		-1.7	-0.2	-1.2
Endogenous debt dynamics 2/	-4.5	-2.2	-8.9			0.3	-0.2	-0.7	-1.1	-1.2	-1.3		-0.8	-0.3	
Contribution from nominal interest rate	0.6	0.6	0.4			0.5	0.4	0.3	0.3	0.4	0.3		0.2	0.2	
Contribution from real GDP growth	-3.2	-0.8	-0.3			-0.2	-0.6	-1.0	-1.4	-1.6	-1.6		-1.0	-0.5	
Contribution from price and exchange rate changes	-2.0	-1.9	-9.0			…	…	…	…	…	…		…	…	
Residual (3-4) 3/	-11.2	-4.5	-8.0			-6.4	-12.6	-9.9	-10.7	-11.0	-10.9		-6.9	-6.3	
o/w exceptional financing	0.0	0.0	-7.3			0.0	-1.3	-1.2	-23.0	0.0	0.0		0.0	0.0	
PV of external debt 4/	...	...	39.9			32.0	33.2	32.6	31.3	28.9	26.1		17.6	9.5	
In percent of exports	...	...	270.5			221.3	229.0	221.9	211.7	193.1	174.1		115.9	60.0	
PV of PPG external debt	...	...	39.9			32.0	33.2	32.6	31.3	28.9	26.1		17.6	9.5	
In percent of exports	...	...	270.5			221.3	229.0	221.9	211.7	193.1	174.1		115.9	60.0	
In percent of government revenues	...	...	315.4			257.8	261.2	250.6	233.8	208.0	182.4		123.8	67.7	
Debt service-to-exports ratio (in percent)	14.6	13.1	11.4			12.3	10.6	10.4	10.2	15.0	15.8		9.0	6.4	
PPG debt service-to-exports ratio (in percent)	14.6	13.1	11.4			12.3	10.6	10.4	10.2	15.0	15.8		9.0	6.4	
PPG debt service-to-revenue ratio (in percent)	13.3	13.7	13.3			14.3	12.0	11.7	11.3	16.1	16.5		9.7	7.2	
Total gross financing need (Billions of U.S. dollars)	0.0	0.0	0.0			0.0	0.1	0.1	0.1	0.1	0.1		0.1	0.1	
Non-interest current account deficit that stabilizes debt ratio	15.9	6.9	18.5			7.7	14.9	12.4	13.6	13.9	14.5		9.3	6.9	
Key macroeconomic assumptions															
Real GDP growth (in percent)	4.2	1.2	0.5	2.0	1.5	0.5	1.0	2.0	3.0	3.5	4.0	2.3	4.0	4.0	4.0
GDP deflator in US dollar terms (change in percent)	2.5	2.8	14.8	6.5	9.8	15.3	-3.7	1.9	3.6	3.5	3.5	4.0	3.0	3.0	3.1
Effective interest rate (percent) 5/	0.8	0.9	0.6	1.0	0.2	1.0	0.7	0.7	0.7	0.8	0.8	0.8	1.0	1.6	1.2
Growth of exports of G&S (US dollar terms, in percent)	0.9	3.6	20.0	8.0	20.8	13.3	-2.4	5.4	7.5	8.4	7.7	6.6	7.0	7.6	7.6
Growth of imports of G&S (US dollar terms, in percent)	15.8	12.4	24.5	8.8	15.1	19.9	-7.4	5.9	8.0	7.0	9.1	7.1	4.9	6.0	5.3
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	17.7	17.7	17.7	42.4	49.1	61.0	34.3	33.1	35.0	39.4
Government revenues (excluding grants, in percent of GDP)	15.7	13.6	12.7			12.4	12.7	13.0	13.4	13.9	14.3		14.2	14.0	14.1
Aid flows (in Billions of US dollars) 7/	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.1	0.1	
o/w Grants	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.1	0.1	
o/w Concessional loans	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Grant-equivalent financing (in percent of GDP) 8/	...	...	...			9.1	6.0	6.2	6.8	6.9	7.0		7.5	7.3	7.4
Grant-equivalent financing (in percent of external financing) 8/	...	...	...			91.9	89.4	93.1	90.6	93.8	96.8		89.7	94.2	92.9
Memorandum items:															
Nominal GDP (Billions of US dollars)	0.4	0.4	0.5			0.5	0.5	0.5	0.6	0.6	0.7		1.0	1.9	
Nominal dollar GDP growth	6.8	4.1	15.4			15.8	-2.7	3.9	6.7	7.1	7.7	**6.4**	7.1	7.1	7.2
PV of PPG external debt (in Billions of US dollars)			0.2			0.2	0.2	0.2	0.2	0.2	0.2		0.2	0.2	
(PVt-PVt-1)/GDPt-1 (in percent)						-2.9	0.3	0.7	0.8	-0.3	-0.8	-0.4	0.4	-0.1	0.0

Source: Comorian authorities; and IMF and World Bank staffs simulations.

1/ Includes both public and private sector external debt.

2/ Derived as [r - g - r(1+g)]/(1+g+r+gr) times previous period debt ratio, with r = nominal interest rate; g = real GDP growth rate, and r = growth rate of GDP deflator in U.S. dollar terms.

3/ Includes exceptional financing (i.e., changes in arrears and debt relief); changes in gross foreign assets; and valuation adjustments. For projections also includes contribution from price and exchange rate changes.

4/ Assumes that PV of private sector debt is equivalent to its face value.

5/ Current-year interest payments divided by previous period debt stock.

6/ Historical averages and standard deviations are generally derived over the past 10 years, subject to data availability.

7/ Defined as grants, concessional loans, and debt relief.

8/ Grant-equivalent financing includes grants provided directly to the government and through new borrowing (difference between the face value and the PV of new debt).

Table 1b.Comoros: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2008-2028

(In percent)

	Projections											
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	**2018**	2028
PV of debt-to GDP ratio												
Baseline	32	33	33	31	29	26	24	21	19	18	**18**	9
A. Alternative Scenarios												
A1. Key variables at their historical averages in 2008-2028 1/	32	26	28	26	24	21	19	17	15	15	**14**	6
A2. New public sector loans on less favorable terms in 2008-2028 2	32	33	32	31	28	26	24	22	20	19	**18**	11
B. Bound Tests												
B1. Real GDP growth at historical average minus one standard deviation in 2009-2010	32	33	33	32	29	27	24	22	20	19	**18**	10
B2. Export value growth at historical average minus one standard deviation in 2009-2010 3/	32	34	36	35	32	29	26	24	22	21	**20**	10
B3. US dollar GDP deflator at historical average minus one standard deviation in 2009-2010	32	33	34	33	30	27	25	22	20	19	**18**	10
B4. Net non-debt creating flows at historical average minus one standard deviation in 2009-2010 4/	32	36	39	38	35	32	29	27	25	23	**22**	11
B5. Combination of B1-B4 using one-half standard deviation shocks	32	33	35	34	32	29	26	24	22	21	**20**	10
B6. One-time 30 percent nominal depreciation relative to the baseline in 2009 5/	32	48	47	45	42	38	34	31	28	27	**25**	14
PV of debt-to-exports ratio												
Baseline	221	229	222	212	193	174	157	142	128	121	**116**	60
A. Alternative Scenarios												
A1. Key variables at their historical averages in 2008-2028 1/	221	180	190	178	160	143	128	115	103	96	**90**	41
A2. New public sector loans on less favorable terms in 2008-2028 2	221	227	218	207	190	174	159	145	133	124	**119**	67
B. Bound Tests												
B1. Real GDP growth at historical average minus one standard deviation in 2009-2010	221	229	222	212	193	174	157	142	128	121	**116**	60
B2. Export value growth at historical average minus one standard deviation in 2009-2010 3/	221	263	330	316	289	263	239	217	198	188	**178**	87
B3. US dollar GDP deflator at historical average minus one standard deviation in 2009-2010	221	229	222	212	193	174	157	142	128	121	**116**	60
B4. Net non-debt creating flows at historical average minus one standard deviation in 2009-2010 4/	221	250	266	254	234	213	195	179	164	155	**146**	69
B5. Combination of B1-B4 using one-half standard deviation shocks	221	240	271	259	238	217	198	180	165	156	**147**	71
B6. One-time 30 percent nominal depreciation relative to the baseline in 2009 5/	221	229	222	212	193	174	157	142	128	121	**116**	60
PV of debt-to-revenue ratio												
Baseline	258	261	251	234	208	182	163	148	136	130	**124**	68
A. Alternative Scenarios												
A1. Key variables at their historical averages in 2008-2028 1/	258	206	215	197	173	150	133	120	108	102	**96**	46
A2. New public sector loans on less favorable terms in 2008-2028 2	258	259	246	229	204	182	164	151	140	133	**127**	76
B. Bound Tests												
B1. Real GDP growth at historical average minus one standard deviation in 2009-2010	258	262	255	238	212	186	166	151	138	132	**126**	69
B2. Export value growth at historical average minus one standard deviation in 2009-2010 3/	258	268	276	258	230	203	183	168	155	148	**141**	73
B3. US dollar GDP deflator at historical average minus one standard deviation in 2009-2010	258	260	263	245	218	191	171	155	142	136	**130**	71
B4. Net non-debt creating flows at historical average minus one standard deviation in 2009-2010 4/	258	285	300	280	252	224	202	187	173	165	**156**	78
B5. Combination of B1-B4 using one-half standard deviation shocks	258	259	272	254	227	201	181	167	154	147	**140**	71
B6. One-time 30 percent nominal depreciation relative to the baseline in 2009 5/	258	379	364	339	302	265	236	215	197	188	**180**	98

Table 1b.Comoros: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2008-2028 (continued)

(In percent)

Debt service-to-exports ratio

Baseline	12	11	10	10	15	16	14	13	11	10	**9**	6
A. Alternative Scenarios												
A1. Key variables at their historical averages in 2008-2028 1/	12	9	8	8	11	11	9	8	7	7	**7**	4
A2. New public sector loans on less favorable terms in 2008-2028 2	12	11	10	10	12	11	11	10	10	9	**9**	6
B. Bound Tests												
B1. Real GDP growth at historical average minus one standard deviation in 2009-2010	12	11	10	10	15	16	14	13	11	9	**9**	6
B2. Export value growth at historical average minus one standard deviation in 2009-2010 3/	12	12	14	15	21	22	20	18	16	14	**14**	10
B3. US dollar GDP deflator at historical average minus one standard deviation in 2009-2010	12	11	10	10	15	16	14	13	11	9	**9**	6
B4. Net non-debt creating flows at historical average minus one standard deviation in 2009-2010 4/	12	11	11	11	16	17	15	14	12	11	**12**	8
B5. Combination of B1-B4 using one-half standard deviation shocks	12	11	11	12	17	18	16	14	13	11	**12**	8
B6. One-time 30 percent nominal depreciation relative to the baseline in 2009 5/	12	11	10	10	15	16	14	13	11	9	**9**	6

Debt service-to-revenue ratio

Baseline	14	12	12	11	16	17	15	13	12	10	**10**	7
A. Alternative Scenarios												
A1. Key variables at their historical averages in 2008-2028 1/	14	11	9	8	12	12	10	8	7	8	**8**	5
A2. New public sector loans on less favorable terms in 2008-2028 2	14	12	12	11	13	12	11	11	10	10	**10**	6
B. Bound Tests												
B1. Real GDP growth at historical average minus one standard deviation in 2009-2010	14	12	12	12	16	17	15	14	12	10	**10**	7
B2. Export value growth at historical average minus one standard deviation in 2009-2010 3/	14	12	12	12	17	17	15	14	12	11	**11**	8
B3. US dollar GDP deflator at historical average minus one standard deviation in 2009-2010	14	12	12	12	17	17	15	14	13	11	**10**	8
B4. Net non-debt creating flows at historical average minus one standard deviation in 2009-2010 4/	14	12	12	12	17	17	15	14	13	12	**13**	9
B5. Combination of B1-B4 using one-half standard deviation shocks	14	11	11	11	16	16	15	13	12	11	**11**	8
B6. One-time 30 percent nominal depreciation relative to the baseline in 2009 5/	14	17	17	16	23	24	21	19	17	15	**14**	10
Memorandum item:												
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	38	38	38	38	38	38	38	38	38	38	**38**	38

Source: Comorian authorities; and IMF and World Bank staffs projections and simulations.

1/ Variables include real GDP growth, growth of GDP deflator (in U.S. dollar terms), non-interest current account in percent of GDP, and non-debt creating flows.
2/ Assumes that the interest rate on new borrowing is by 2 percentage points higher than in the baseline., while grace and maturity periods are the same as in the baseline.
3/ Exports values are assumed to remain permanently at the lower level, but the current account as a share of GDP is assumed to return to its baseline level after the shock (implicitly assuming an offsetting adjustment in import levels).
4/ Includes official and private transfers and FDI.
5/ Depreciation is defined as percentage decline in dollar/local currency rate, such that it never exceeds 100 percent.
6/ Applies to all stress scenarios except for A2 (less favorable financing) in which the terms on all new financing are as specified in footnote 2.

Table 2a.Comoros: Public Sector Debt Sustainability Framework, Baseline Scenario (Non HIPC/MDRI), 2005-2028
(In percent of GDP, unless otherwise indicated)

	Actual			Average	Standard Deviation	Estimate	Projections								
	2005	2006	2007			2008	2009	2010	2011	2012	2013	2008-13 Average	2018	2028	2014-28 Average
Public sector debt 1/	73.9	73.2	60.9			61.0	56.0	53.3	50.1	45.9	41.3		27.4	15.0	
o/w foreign-currency denominated	71.2	69.8	57.6			58.0	53.2	50.6	47.5	43.3	38.8		24.9	12.6	
Change in public sector debt	-8.8	-0.6	-12.3			0.1	-5.0	-2.7	-3.2	-4.2	-4.6		-1.6	-1.0	
Identified debt-creating flows	4.7	-6.9	-15.4			1.0	-3.0	-1.1	-24.5	-2.4	-2.9		-1.3	0.0	
Primary deficit	-0.8	1.8	1.5	1.4	1.2	-0.3	2.1	1.8	1.3	0.5	0.0	0.9	0.3	0.7	0.4
Revenue and grants	19.9	18.7	20.3			21.3	18.6	19.1	19.7	20.4	21.0		21.3	21.1	
of which: grants	4.3	5.0	7.6			8.9	5.9	6.1	6.3	6.5	6.7		7.1	7.1	
Primary (noninterest) expenditure	19.1	20.5	21.8			21.0	20.7	20.9	21.0	20.9	21.0		21.6	21.8	
Automatic debt dynamics	5.6	-8.7	-9.7			1.2	-3.9	-1.7	-2.9	-2.9	-2.8		-1.6	-0.7	
Contribution from interest rate/growth differential	-5.1	-2.4	-1.7			-0.7	-1.4	-1.7	-2.1	-2.2	-2.2		-1.3	-0.6	
of which: contribution from average real interest rate	-1.7	-1.5	-1.4			-0.4	-0.8	-0.6	-0.6	-0.5	-0.4		-0.2	0.0	
of which: contribution from real GDP growth	-3.4	-0.9	-0.4			-0.3	-0.6	-1.1	-1.6	-1.7	-1.8		-1.1	-0.6	
Contribution from real exchange rate depreciation	10.6	-6.4	-7.9			2.0	-2.5	0.0	-0.8	-0.7	-0.6		...	...	
Other identified debt-creating flows	0.0	0.0	-7.3			0.0	-1.3	-1.2	-23.0	0.0	0.0		0.0	0.0	
Privatization receipts (negative)	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Recognition of implicit or contingent liabilities	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Debt relief (HIPC and other)	0.0	0.0	-7.3			0.0	-1.3	-1.2	-23.0	0.0	0.0		0.0	0.0	
Other (specify, e.g. bank recapitalization)	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Residual, including asset changes	-13.5	6.2	3.1			-0.8	-2.0	-1.6	21.3	-1.8	-1.7		-0.4	-1.0	
Other Sustainability Indicators															
PV of public sector debt	2.7	3.5	40.9			38.3	35.9	35.2	33.9	31.4	28.5		20.0	11.9	
o/w foreign-currency denominated	0.0	0.0	37.5			35.3	33.1	32.5	31.3	28.9	26.0		17.5	9.5	
o/w external	...	...	37.5			35.3	33.1	32.5	31.3	28.9	26.0		17.5	9.5	
PV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...	
Gross financing need 2/	3.3	5.6	5.8			4.0	6.1	5.7	5.2	5.0	4.6		4.2	4.1	
PV of public sector debt-to-revenue and grants ratio (in percent)	13.5	18.5	201.3			179.8	193.1	184.6	172.2	154.2	136.1		94.2	56.5	
PV of public sector debt-to-revenue ratio (in percent)	17.2	25.3	322.9			309.0	282.5	270.9	252.9	226.0	199.6		141.2	85.0	
o/w external 3/	…	…	296.5			284.6	260.7	250.1	233.3	207.6	182.0		123.6	67.5	
Debt service-to-revenue and grants ratio (in percent) 4/	10.9	11.0	9.1			9.2	9.2	8.9	8.6	11.8	12.0		6.9	5.4	
Debt service-to-revenue ratio (in percent) 4/	13.9	15.1	14.6			15.8	13.4	13.0	12.6	17.3	17.6		10.4	8.1	
Primary deficit that stabilizes the debt-to-GDP ratio	7.9	2.5	13.9			-0.4	7.1	4.5	4.6	4.7	4.5		2.0	1.7	
Key macroeconomic and fiscal assumptions															
Real GDP growth (in percent)	4.2	1.2	0.5	2.0	1.5	0.5	1.0	2.0	3.0	3.5	4.0	2.3	4.0	4.0	4.0
Average nominal interest rate on forex debt (in percent)	0.8	0.9	0.6	1.0	0.2	1.0	0.7	0.7	0.7	0.8	0.8	0.8	1.0	1.6	1.2
Average real interest rate on domestic debt (in percent)	2.1	3.2	-2.0	-0.9	8.4	-3.6	-2.5	2.3	0.7	0.4	0.4	-0.4	1.2	2.0	1.4
Real exchange rate depreciation (in percent, + indicates depreciation)	14.1	-9.2	-11.6	-6.0	19.4	3.5	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	2.3	2.0	5.2	5.4	9.4	7.1	6.1	1.4	3.1	3.5	3.5	4.1	3.0	3.0	3.1
Growth of real primary spending (deflated by GDP deflator, in percent)	0.0	0.1	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Grant element of new external borrowing (in percent)	...	...	...	…	…	17.7	17.7	17.7	42.4	49.1	61.0	34.3	33.1	35.0	...

Sources: Comorian authorities; and IMF and World Bank staffs estimates and projections.

1/ [Indicate coverage of public sector, e.g., general government or nonfinancial public sector. Also whether net or gross debt is used.]

2/ Gross financing need is defined as the primary deficit plus debt service plus the stock of short-term debt at the end of the last period.

3/ Revenues excluding grants.

4/ Debt service is defined as the sum of interest and amortization of medium and long-term debt.

5/ Historical averages and standard deviations are generally derived over the past 10 years, subject to data availability.

Table 2b.Comoros: Sensitivity Analysis for Key Indicators of Public Debt 2008-2028

		Projections						
	2008	2009	2010	2011	2012	2013	2018	2028
PV of Debt-to-GDP Ratio								
Baseline	38	36	35	34	31	29	20	12
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	38	35	34	33	32	31	29	29
A2. Primary balance is unchanged from 2008	38	34	32	30	28	26	21	13
A3. Permanently lower GDP growth 1/	38	36	36	34	32	30	23	20
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2009-2010	38	36	36	35	33	30	23	16
B2. Primary balance is at historical average minus one standard deviations in 2009-2010	38	36	36	35	33	30	21	13
B3. Combination of B1-B2 using one half standard deviation shocks	38	36	35	34	32	29	21	13
B4. One-time 30 percent real depreciation in 2009	38	50	50	48	45	42	31	20
B5. 10 percent of GDP increase in other debt-creating flows in 2009	38	45	44	43	40	37	27	17
PV of Debt-to-Revenue Ratio 2/								
Baseline	180	193	185	172	154	136	94	56
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	180	188	178	168	156	145	132	120
A2. Primary balance is unchanged from 2008	180	184	168	155	139	124	97	63
A3. Permanently lower GDP growth 1/	180	194	186	175	157	140	106	94
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2009-2010	180	194	189	177	160	143	105	76
B2. Primary balance is at historical average minus one standard deviations in 2009-2010	180	195	191	178	160	141	99	60
B3. Combination of B1-B2 using one half standard deviation shocks	180	192	186	174	156	138	97	61
B4. One-time 30 percent real depreciation in 2009	180	272	262	244	221	198	145	95
B5. 10 percent of GDP increase in other debt-creating flows in 2009	180	241	232	217	196	176	129	82
Debt Service-to-Revenue Ratio 2/								
Baseline	9	9	9	9	12	12	7	5
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	9	9	9	8	12	12	9	10
A2. Primary balance is unchanged from 2008	9	9	9	9	12	13	8	8
A3. Permanently lower GDP growth 1/	9	9	9	9	12	12	7	7
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2009-2010	9	9	9	9	12	12	7	7
B2. Primary balance is at historical average minus one standard deviations in 2009-2010	9	9	9	9	12	12	7	6
B3. Combination of B1-B2 using one half standard deviation shocks	9	9	9	9	12	12	7	6
B4. One-time 30 percent real depreciation in 2009	9	11	12	12	17	17	11	10
B5. 10 percent of GDP increase in other debt-creating flows in 2009	9	9	11	10	14	14	8	8

Sources: Comorian authorities; and IMF and World Bank staffs estimates and projections.

1/ Assumes that real GDP growth is at baseline minus one standard deviation divided by the length of the projection period.

2/ Revenues are defined inclusive of grants.

Table 3. Comoros: External Debt Sustainability Framework, Alternative Scenario (HIPC/MDRI), 2005-2028 1/
(In percent of GDP, unless otherwise indicated)

	Actual			Historical 0 Average 0	Standard Deviation	Projections									
	2005	2006	2007			2008	2009	2010	2011	2012	2013	2008-2013 Average	2018	2028	2014-2028 Average
External debt (nominal) 1/	**71.2**	**69.8**	**57.6**			**58.4**	**53.8**	**51.6**	**49.2**	**45.8**	**42.0**		**30.1**	**18.6**	
o/w public and publicly guaranteed (PPG)	71.2	69.8	57.6			58.4	53.8	51.6	49.2	45.8	42.0		30.1	18.6	
Change in external debt	-9.3	-1.4	-12.2			0.9	-4.6	-2.2	-2.4	-3.4	-3.9		-1.3	-1.1	
Identified net debt-creating flows	1.9	3.1	-4.2			6.8	7.8	7.2	7.5	6.8	6.3		5.1	5.1	
Non-interest current account deficit	**6.5**	**5.5**	**6.3**	**2.8**	**3.4**	**8.2**	**10.3**	**9.9**	**10.7**	**10.1**	**10.2**		**7.8**	**5.8**	7.3
Deficit in balance of goods and services	21.5	24.4	26.9			28.7	26.5	27.1	27.5	27.3	27.9		23.0	16.9	
Exports	14.3	14.2	14.8			14.4	14.5	14.7	14.8	15.0	15.0		15.1	15.8	
Imports	35.8	38.6	41.6			43.1	41.0	41.8	42.3	42.3	42.8		38.1	32.6	
Net current transfers (negative = inflow)	-14.5	-18.3	-19.8	-15.7	2.5	-19.7	-16.1	-16.8	-16.4	-16.9	-17.3		-15.1	-11.2	-13.8
o/w official	-0.4	-1.6	-2.8			-3.6	-0.5	-0.5	-0.5	-0.6	-0.6		-0.6	-0.6	
Other current account flows (negative = net inflow)	-0.4	-0.7	-0.8			-0.8	-0.2	-0.4	-0.4	-0.4	-0.3		-0.1	0.2	
Net FDI (negative = inflow)	**-0.1**	**-0.2**	**-1.6**	**-0.4**	**0.4**	**-1.6**	**-2.1**	**-1.9**	**-1.8**	**-1.7**	**-2.3**		**-1.7**	**-0.2**	-1.2
Endogenous debt dynamics 2/	**-4.5**	**-2.2**	**-8.9**			**0.3**	**-0.4**	**-0.8**	**-1.4**	**-1.5**	**-1.6**		**-1.1**	**-0.5**	
Contribution from nominal interest rate	0.6	0.6	0.4			0.5	0.3	0.2	0.1	0.1	0.1		0.1	0.2	
Contribution from real GDP growth	-3.2	-0.8	-0.3			-0.2	-0.6	-1.0	-1.5	-1.6	-1.7		-1.2	-0.7	
Contribution from price and exchange rate changes	-2.0	-1.9	-9.0			…	…	…	…	…	…		…	…	
Residual (3-4) 3/	**-11.2**	**-4.5**	**-8.0**			**-5.9**	**-12.4**	**-9.4**	**-9.9**	**-10.2**	**-10.2**		**-6.4**	**-6.2**	
o/w exceptional financing	0.0	0.0	-7.3			-0.4	-1.6	-1.6	-23.1	0.0	0.0		0.0	0.0	
PV of external debt 4/	...	...	39.9			37.1	38.4	37.7	15.0	14.1	12.6		9.6	7.8	
In percent of exports	...	...	270.5			256.9	265.4	257.0	101.6	94.1	84.4		63.5	49.4	
PV of PPG external debt	**...**	**...**	**39.9**			**37.1**	**38.4**	**37.7**	**15.0**	**14.1**	**12.6**		**9.6**	**7.8**	
In percent of exports	**...**	**...**	**270.5**			**256.9**	**265.4**	**257.0**	**101.6**	**94.1**	**84.4**		**63.5**	**49.4**	
In percent of government revenues	**...**	**...**	**315.4**			**299.4**	**302.6**	**290.2**	**112.1**	**101.4**	**88.4**		**67.8**	**55.7**	
Debt service-to-exports ratio (in percent)	**14.6**	**13.1**	**11.4**			**12.8**	**7.6**	**6.5**	**3.3**	**7.2**	**8.9**		**4.0**	**4.2**	
PPG debt service-to-exports ratio (in percent)	**14.6**	**13.1**	**11.4**			**12.8**	**7.6**	**6.5**	**3.3**	**7.2**	**8.9**		**4.0**	**4.2**	
PPG debt service-to-revenue ratio (in percent)	**13.3**	**13.7**	**13.3**			**14.9**	**8.6**	**7.4**	**3.7**	**7.7**	**9.3**		**4.2**	**4.8**	
Total gross financing need (Billions of U.S. dollars)	0.0	0.0	0.0			0.0	0.0	0.0	0.1	0.1	0.1		0.1	0.1	
Non-interest current account deficit that stabilizes debt ratio	15.9	6.9	18.5			7.3	14.9	12.1	13.2	13.4	14.1		9.2	6.9	
Key macroeconomic assumptions															
Real GDP growth (in percent)	4.2	1.2	0.5	2.0	1.5	0.5	1.0	2.0	3.0	3.5	4.0	2.3	4.0	4.0	4.0
GDP deflator in US dollar terms (change in percent)	2.5	2.8	14.8	6.5	9.8	15.3	-3.7	1.9	3.6	3.5	3.5	4.0	3.0	3.0	3.1
Effective interest rate (percent) 5/	0.8	0.9	0.6	1.0	0.2	1.0	0.4	0.4	0.1	0.2	0.2	0.4	0.3	1.0	0.6
Growth of exports of G&S (US dollar terms, in percent)	0.9	3.6	20.0	8.0	20.8	13.3	-2.4	5.4	7.5	8.4	7.7	6.6	7.0	7.6	7.6
Growth of imports of G&S (US dollar terms, in percent)	15.8	12.4	24.5	8.8	15.1	19.9	-7.4	5.9	8.0	7.0	9.1	7.1	4.9	6.0	5.3
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	17.7	17.7	17.7	42.4	49.1	61.0	34.3	33.1	35.0	39.4
Government revenues (excluding grants, in percent of GDP)	15.7	13.6	12.7			12.4	12.7	13.0	13.4	13.9	14.3		14.2	14.0	14.1
Aid flows (in Billions of US dollars) 7/	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.1	0.1	
o/w Grants	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.1	0.1	
o/w Concessional loans	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Grant-equivalent financing (in percent of GDP) 8/	...	...	...			9.1	6.0	6.2	6.8	6.9	7.0		7.5	7.3	7.4
Grant-equivalent financing (in percent of external financing) 8/	...	...	...			91.9	89.4	93.1	90.6	93.8	96.8		89.7	94.2	92.9
Memorandum items:															
Nominal GDP (Billions of US dollars)	0.4	0.4	0.5			0.5	0.5	0.5	0.6	0.6	0.7		1.0	1.9	
Nominal dollar GDP growth	6.8	4.1	15.4			15.8	-2.7	3.9	6.7	7.1	7.7	**6.4**	7.1	7.1	7.2
PV of PPG external debt (in Billions of US dollars)			0.2			0.2	0.2	0.2	0.1	0.1	0.1		0.1	0.1	
(PVt-PVt-1)/GDPt-1 (in percent)						3.1	0.3	0.8	-21.7	0.1	-0.5	-3.0	0.7	0.2	0.3

Source: Staff simulations. 0

1/ Includes both public and private sector external debt.
2/ Derived as [r - g - r(1+g)]/(1+g+r+gr) times previous period debt ratio, with r = nominal interest rate; g = real GDP growth rate, and r = growth rate of GDP deflator in U.S. dollar terms.
3/ Includes exceptional financing (i.e., changes in arrears and debt relief); changes in gross foreign assets; and valuation adjustments. For projections also includes contribution from price and exchange rate changes.
4/ Assumes that PV of private sector debt is equivalent to its face value.
5/ Current-year interest payments divided by previous period debt stock.
6/ Historical averages and standard deviations are generally derived over the past 10 years, subject to data availability.
7/ Defined as grants, concessional loans, and debt relief.
8/ Grant-equivalent financing includes grants provided directly to the government and through new borrowing (difference between the face value and the PV of new debt).