INTERNATIONAL MONETARY FUND

UNION OF THE COMOROS

STAFF REPORT FOR THE 2016 ARTICLE IV CONSULTATION; AND STAFF-MONITORED PROGRAM—DEBT SUSTAINABILITY ANALYSIS

November 21, 2016

Approved By
David Owen (IMF) and Ms. Anos-Casero (IDA)

Prepared by the staff of the International Monetary Fund and the World Bank Group.

Based on an updated external LIC DSA, Comoros' risk of debt distress continues to be assessed as moderate. The inclusion of remittances in the analysis remains a key factor underlying the debt sustainability outlook but is also a source of vulnerability. The results also highlight that it is essential that any eventual future borrowing take place on concessional terms. Public sector domestic debt and private sector external debt are minimal in Comoros and are expected to remain so for the foreseeable future.[1]

[1] Comoros' three-year average CPIA score is 2.77, implying a weak policy performance rating for the current DSA.

BACKGROUND

1. **Comoros reached the completion point under the HIPC Initiative in December 2012.** Following agreements with all but one bilateral creditors[2], Comoros received extensive irrevocable debt relief in 2013 which resulted in a decline in nominal external debt from 40.5 percent of GDP at end-2012 to 18.5 percent at end-2013 (Table A1). Moreover, all the debt and debt service indicators were brought below their respective thresholds of the debt sustainability framework. Since the completion point, Comoros has contracted only one loan, with a concessionality level close to 50 percent, with India of about $33 million for the construction of a heavy-fuel electricity generation plant. Disbursements on this loan, the first of which was made in 2015, are anticipated to continue through 2017. Disbursements of an earlier loan, on similarly concessional terms, with China of $32.3 million for strengthening the domestic telecommunications infrastructure began in 2015.[3]

Text Table 1: Nominal Stock of External Debt, 2015[1]
(Millions of U.S. Dollars; end-of-period)

Total External Debt[2]	**141.6**
Multilateral Creditors	**79.8**
IMF	19.7
IDA	13.8
BADEA	28.0
Other multilateral creditors	18.3
Official Bilateral	**61.8**
Paris Club Creditors	3.3
Non-Paris Club Creditors	58.5
of which: Saudi Arabia	14.9
Kuwait	27.3
India[3]	6.6
China[4]	8.8

[1] Following Paris Club cancellation of all its HIPC-eligible debt, rescheduling of short-term debt in arrears, and restructuring non-Paris club debt.

[2] Excludes $11,584.2 of hospital debt owed by Comoros to France.

[3] Disbursements of $36.6 million are expected over the period 2015 – 2017.

[4] Disbursements of $32.3 million are expected over the period 2015 – 2017.

Source: Comorian authorities

[2] Mauritius is the remaining holdout; negotiations are ongoing.

[3] This loan was contracted in 2010.

UNDERLYING ASSUMPTIONS

2. **The medium to long-term macroeconomic assumptions for the DSA are broadly similar to those for the previous DSA prepared in connection with the 2014 Article IV consultation and released in February 2015** (Text Table 2). However, the DSA update reflects the economic difficulties that Comoros is facing as a result of the electricity crisis and ongoing fiscal challenges.

Text Table 2. Comoros: Assumptions for DSA

	2014 Article IV DSA			2015 Article IV DSA		
	2014-2019	2024	2034	2016-2020	2026	2036
GDP Growth Rate (percent)	3.8	4.0	4.0	3.5	4.0	4.0
Inflation, end of period (percent)	2.6	2.5	2.5	2.0	2.0	2.0
Government Revenues and Grants (percent of GDP)	24.8	26.8	29.4	24.3	25.3	24.2
Overall Fiscal Balance (percent of GDP)	-1.3	-0.3	0.8	-4.7	-6.8	-7.7
FDI (percent of GDP)	2.2	2.7	2.7	1.3	1.6	1.6
Current Account Deficit (percent of GDP)	10.2	8.7	6.7	10.3	12.0	9.8
Exports of Goods and Services (annual percentage growth)	2.3	3.9	4.0	2.8	2.9	3.2
Imports of Goods and Services (annual percentage growth)	6.8	5.4	5.2	8.3	3.3	3.8

- **Real Growth** in 2015 is estimated at 1 percent compared to a projected 3.5 percent in the DSA for the 2014 Article IV report. Moreover, the growth projection for 2016 has been lowered from 4 percent in the previous DSA to 2.2 percent currently, amidst a persistent and deep electricity crisis and a poor business environment that is adversely impacting the economy. Thereafter, economic growth is projected to converge gradually to an average of 4 percent growth per year as in the previous DSA, due to a more stable political environment, the coming online of the heavy-fuel plant that will improve the energy supply, the arrival of a new operator in the telecommunication sector, and improvements in infrastructure resulting from a more effective execution of the public investment program in roads, hospitals and schools.

- **Inflation** is expected to remain moderate, at a projected 2.0 percent per year in the medium term, guided by the exchange rate peg to the euro and the monetary cooperation agreement with France.

- The **current account deficit** is projected to average around 10 percent of GDP per year over the medium term. This largely reflects an increase in imports stemming from current investment projects in the energy and telecom sectors and a stagnation of exports relative to the size of national income.[4] Indeed, as in the previous DSA, the growth of imports in volume terms is expected to far outstrip that of exports in the medium term. The current account deficit is assumed to remain stable at around 10 percent of GDP by the end of the projection period, representing continuing net resource transfers to Comoros in the form of external financing (both grants and loans, as well as some foreign investment) in support of growth and development.

[4] While exports are expected to grow at the pace of world trade in the medium term, as a percentage of GDP they are projected to remain steady at about 17 percent of GDP over the forecast horizon.

- **Gross private remittances** received from the diaspora in France, which have been resilient in the face of recession and slowdown in Europe, are projected to continue to grow in nominal terms but decline gradually relative to GDP, from 26.9 percent of GDP in 2016 to about 24 percent in 2020 and 19.0 percent by 2035.[5] This represents an upward revision relative to the previous DSA. These remittances are assumed to continue to finance the bulk of imports to Comoros.

- **Gross investment** in support of growth is projected to rise. Investment is projected to average 20.8 percent of GDP over the medium term and rise slightly thereafter.

- **Public investment** is projected to on average account for more than half of investment in the medium term, initially mainly financed by project grants. Over time, foreign borrowing (on concessional terms; an average grant element of 42 percent, corresponding to non-Paris Club bilateral terms in the LIC DSA template) is assumed to gradually replace some of the grant financing so that by 2036 grants account for two-thirds of foreign-financed capital spending and loans with concessionality levels close to 50 percent for one-third. After a hump in 2016 and 2017 due to the disbursement of the Indian and Chinese loans, new external borrowing is assumed to rise from 2.1 percent of GDP in 2018 to 4.25 percent in 2036, averaging US$45 million per year. This assumption of increased external borrowing over time plays an important role in the DSA and largely explains the upward slope of the debt burden indicators in the baseline. While this assumption is not based on any concrete borrowing plans, it seems reasonable to expect that the share of grant financing in overall financing will decline, and that of loan financing rise, over time, at least in relative terms, even though per capita income is projected to increase only slowly over the next two decades. It is anticipated that investments associated with external borrowing will be made in infrastructure such as electricity, roads, tourism, and other sectors. Domestically-financed capital spending is projected to rise modestly over the projection period. No domestic borrowing by the government is assumed.

- The overall **fiscal overall deficit** is projected to average 4.7 percent of GDP in the medium term, reflecting Comoros' ongoing fiscal challenges related to revenue mobilization and containing current spending. Due principally to Comoros' ambitious public investment program, intended to address their urgent development needs, the fiscal balance is expected to remain in deficit over the long term. It is expected that the deficit will be mainly financed through external loans for investment purposes.

[5] Historical remittance figures are based on central bank data, which are prepared according to the BPM5 methodology and the corresponding definition of remittances. Projections of remittances are based on consultations with the authorities. The remittances play an important role in the DSA and a faster decline relative to GDP than assumed would adversely affect the debt sustainability outlook.

EXTERNAL DSA

3. Comoros qualifies for the inclusion of private remittances in the denominator of the debt and debt service indicators for the purposes of the baseline of the DSA. For Comoros, private remittance inflows represent a large source of foreign exchange—currently estimated to be in excess of 27 percent of GDP—and sizable inflows are expected to continue over the medium to long term. That said, the debt sustainability outlook is highly sensitive to the level of remittance flows, which more than doubled relative to GDP in the decade to 2014, and are potentially subject to downside risk should the economic slowdown in Europe continue.

4. The baseline scenario is broadly in line with that of the previous DSA although there has been a marginal improvement in debt burden indicators. Whereas in the previous DSA, the ratio of PV debt-to-exports and remittances breached the threshold toward the end of the projection period, in the current DSA this ratio only rises to the threshold by the end of the projection period. All other debt or debt service burden indicators are well below their respective thresholds in the baseline scenario (Figure A1; Tables A1 and A2). The improvement in the debt-to-exports indicator reflects a combination of factors, on the negative side the inclusion of the Chinese and Indian loans, which were not included in the previous DSA, while on the positive side the higher remittances.

5. The results of the stress tests and alternative scenarios share similarities and differences with those under the previous DSA. As before, the ratio of the PV of debt to exports plus remittances shows a breach of its threshold under a stress test. Whereas previously the most severe stress test was that to non-debt creating flows (chiefly remittances), this time around the shock to the terms of new borrowing is the most critical.[6] Also in contrast to the previous DSA, currently the ratio of debt to GDP plus remittances, as well as the PV of debt to revenue ratio, moderately breach the threshold towards the end of the projection period under a one-time depreciation shock.[7] The potential impact of these two shocks on Comoros' debt sustainability highlights the importance of a prudent debt management strategy, particularly as relates to obtaining loans on concessional terms, as well as the stability provided by the exchange rate peg of the Comorian Franc to the Euro under the monetary cooperation agreement with France. Under the historical scenario, the initial improvement in the debt and debt service indicators mainly reflects that the projected current account deficits in the baseline are larger than the historical deficits over the medium term. The historical scenario is, therefore, over-financed during this period.

[6] Refers to public sector loans on less favorable terms during the period 2016 – 36. Less favorable terms are defined as 2 percent increase in the interest rate for new borrowing, which would see the grant element of new borrowing at 30 percent or below from 2017 onwards.

[7] Defined as a one-time 30 percent annual depreciation relative to the baseline in 2017.

CONCLUSION

6. It is the view of the staffs of the IMF and the World Bank, shared by the authorities, that the updated DSA warrants maintaining a moderate risk of debt distress rating for Comoros. The impact of the somewhat higher borrowing (Chinese and Indian loans) than assumed previously has been offset by the higher remittances. While there are no breaches of debt or debt service thresholds in the baseline and only a modest breach of the threshold in three stress tests, the DSA continues to underline the critical role that remittances play in maintaining the moderate risk of debt distress rating. As such, Comoros remains vulnerable to shocks to remittance inflows, increasing the importance of fostering a climate conducive to the productive use of remittances, and limiting the recourse to external financing, particularly on non-concessional terms. The analysis also highlights the importance of striving to maintain higher growth levels compared to historical average by implementing planned structural reforms in infrastructure and the businesses environment and the electricity and the telecom sectors in a timely fashion. The considerable amounts of external borrowing built into the DSA also underscore the need to strengthen debt management capacity.

Table 1. Comoros: External Debt Sustainability Framework Baseline Scenario,20136-2036 1/

(In percent of GDP, unless otherwise indicated))

	Actual			Historical 6/	Standard 6/	Projections									
				Average	Deviation							2016-2021			2022-2036
	2013	2014	2015			2016	2017	2018	2019	2020	2021	Average	2026	2036	Average
External debt (nominal) 1/	**18.5**	**20.2**	**24.2**			**25.4**	**27.7**	**27.3**	**26.9**	**26.8**	**27.2**		**30.1**	**39.2**	
of which: public and publicly guaranteed (PPG)	18.5	20.2	24.2			25.4	27.7	27.3	26.9	26.8	27.2		30.1	39.2	
Change in external debt	-22.0	1.7	4.0			1.2	2.3	-0.4	-0.4	-0.1	0.3		0.6	0.8	
Identified net debt-creating flows	2.9	7.2	1.9			7.5	8.0	8.2	8.5	8.5	11.7		9.3	6.8	
Non-interest current account deficit	**8.0**	**8.6**	**-0.6**	**5.3**	**3.5**	**9.1**	**9.9**	**10.3**	**10.5**	**10.5**	**13.9**		**11.7**	**9.5**	10.9
Deficit in balance of goods and services	-67.6	-66.0	-62.6			-64.7	-65.2	-64.2	-63.4	-63.2	-66.4		-63.4	-59.4	
Exports	15.6	16.3	17.1			17.3	17.4	17.4	17.4	17.3	17.3		17.3	17.6	
Imports	-52.0	-49.7	-45.5			-47.4	-47.8	-46.9	-46.0	-45.9	-49.1		-46.1	-41.8	
Net current transfers (negative = inflow)	-28.0	-24.3	-28.3	-26.7	5.0	-20.7	-20.2	-18.8	-17.9	-17.8	-17.8		-16.9	-14.6	-16.3
of which: official	-6.1	-2.7	-9.9			-2.7	-2.6	-1.7	-1.3	-1.3	-1.4		-1.3	-1.1	
Other current account flows (negative = net inflow)	103.6	98.9	90.2			94.5	95.3	93.4	91.8	91.5	98.0		92.0	83.5	
Net FDI (negative = inflow)	**-1.4**	**-0.7**	**-0.8**	**-1.5**	**1.0**	**-1.3**	**-1.3**	**-1.3**	**-1.3**	**-1.3**	**-1.4**		**-1.6**	**-1.6**	-1.6
Endogenous debt dynamics 2/	**-3.7**	**-0.7**	**3.3**			**-0.3**	**-0.6**	**-0.8**	**-0.8**	**-0.8**	**-0.8**		**-0.8**	**-1.1**	
Contribution from nominal interest rate	0.1	0.0	0.0			0.2	0.2	0.2	0.2	0.2	0.3		0.3	0.4	
Contribution from real GDP growth	-1.3	-0.3	-0.2			-0.5	-0.8	-1.0	-1.0	-1.0	-1.0		-1.1	-1.4	
Contribution from price and exchange rate changes	-2.5	-0.4	3.5			...	...	...	...	...	...		...	...	
Residual (3-4) 3/	**-24.9**	**-5.5**	**2.1**			**-6.3**	**-5.6**	**-8.6**	**-8.9**	**-8.5**	**-11.4**		**-8.7**	**-6.0**	
of which: exceptional financing	0.0	-1.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
PV of external debt 4/	...	...	14.8			15.6	17.1	17.0	16.9	17.0	17.4		20.1	27.2	
In percent of exports	...	...	86.6			90.2	98.0	97.7	97.1	98.0	100.4		116.1	154.5	
PV of PPG external debt	**...**	**...**	**14.8**			**15.6**	**17.1**	**17.0**	**16.9**	**17.0**	**17.4**		**20.1**	**27.2**	
In percent of exports	**...**	**...**	**86.6**			**90.2**	**98.0**	**97.7**	**97.1**	**98.0**	**100.4**		**116.1**	**154.5**	
In percent of government revenues	**...**	**...**	**89.7**			**108.4**	**106.8**	**103.1**	**99.0**	**96.3**	**98.6**		**114.1**	**153.8**	
Debt service-to-exports ratio (in percent)	**2.0**	**1.5**	**0.9**			**4.6**	**5.1**	**5.9**	**6.2**	**5.7**	**5.0**		**5.9**	**8.7**	
PPG debt service-to-exports ratio (in percent)	**2.0**	**1.5**	**0.9**			**4.6**	**5.1**	**5.9**	**6.2**	**5.7**	**5.0**		**5.9**	**8.7**	
PPG debt service-to-revenue ratio (in percent)	**2.0**	**1.7**	**0.9**			**5.6**	**5.6**	**6.2**	**6.3**	**5.6**	**4.9**		**5.8**	**8.7**	
Total gross financing need (Millions of U.S. dollars)	45.4	55.6	-7.6			53.4	61.9	70.0	76.9	81.5	112.9		128.3	201.3	
Non-interest current account deficit that stabilizes debt ratio	30.1	6.9	-4.6			7.9	7.5	10.7	11.0	10.6	13.5		11.1	8.7	
Key macroeconomic assumptions															
Real GDP growth (in percent)	3.5	2.0	1.0	1.8	0.9	2.2	3.3	4.0	4.0	4.0	4.0	3.6	4.0	4.0	4.0
GDP deflator in US dollar terms (change in percent)	6.5	2.0	-14.8	2.8	8.9	3.2	2.1	2.3	2.8	3.1	2.1	2.6	2.3	2.3	2.3
Effective interest rate (percent) 5/	0.2	0.1	0.2	0.5	0.3	0.7	0.9	0.9	1.0	1.0	1.0	0.9	1.1	1.0	1.1
Growth of exports of G&S (US dollar terms, in percent)	14.5	8.5	-9.5	6.8	10.5	6.4	6.3	6.3	6.8	7.0	6.0	6.5	6.5	6.6	6.5
Growth of imports of G&S (US dollar terms, in percent)	5.5	-0.5	-21.3	7.8	15.1	9.9	6.3	4.3	5.1	6.9	13.6	7.7	5.0	5.7	5.2
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	44.3	43.5	42.3	42.3	42.3	42.3	42.8	42.3	42.3	42.3
Government revenues (excluding grants, in percent of GDP)	15.5	14.5	16.5			14.4	16.0	16.5	17.0	17.6	17.6		17.6	17.7	17.6
Aid flows (in Millions of US dollars) 7/	181.0	64.2	89.2			73.0	83.2	69.0	73.9	79.3	91.4		124.4	230.8	
of which: Grants	180.8	64.0	89.0			51.9	54.5	54.4	57.3	60.6	70.4		88.5	139.8	
of which: Concessional loans	0.3	0.2	0.2			21.1	28.7	14.6	16.6	18.8	21.0		35.9	90.9	
Grant-equivalent financing (in percent of GDP) 8/	...	...	...			9.9	10.2	8.7	8.6	8.6	9.3		9.0	8.3	8.8
Grant-equivalent financing (in percent of external financing) 8/	...	...	...			83.9	80.5	87.8	87.1	86.3	86.7		83.4	77.3	81.4
Memorandum items:															
Nominal GDP (Millions of US dollars)	657.7	683.6	588.7			620.4	654.3	696.1	744.6	798.5	847.5		1154.2	2140.7	
Nominal dollar GDP growth	10.3	4.0	-13.9			5.4	5.5	6.4	7.0	7.2	6.1	6.3	6.4	6.4	6.4
PV of PPG external debt (in Millions of US dollars)			86.8			96.5	111.7	118.6	126.1	135.4	147.0		232.0	580.9	
(PVt-PVt-1)/GDPt-1 (in percent)						1.6	2.5	1.1	1.1	1.3	1.5	1.5	1.8	2.3	2.1
Gross workers' remittances (Millions of US dollars)	166.1	204.1	161.8			167.1	172.2	177.8	184.3	195.0	203.6		254.9	399.6	
PV of PPG external debt (in percent of GDP + remittances)	...	...	11.6			12.3	13.5	13.5	13.5	13.6	14.0		16.5	22.9	
PV of PPG external debt (in percent of exports + remittances)	...	...	33.2			35.2	39.0	39.6	40.0	40.7	42.0		51.0	74.9	
Debt service of PPG external debt (in percent of exports + remittances)	...	...	0.3			1.8	2.0	2.4	2.6	2.3	2.1		2.6	4.2	

Sources: Country authorities; and staff estimates and projections.

1/ Includes both public and private sector external debt.

2/ Derived as [r - g - ρ(1+g)]/(1+g+ρ+gρ) times previous period debt ratio, with r = nominal interest rate; g = real GDP growth rate, and ρ = 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.

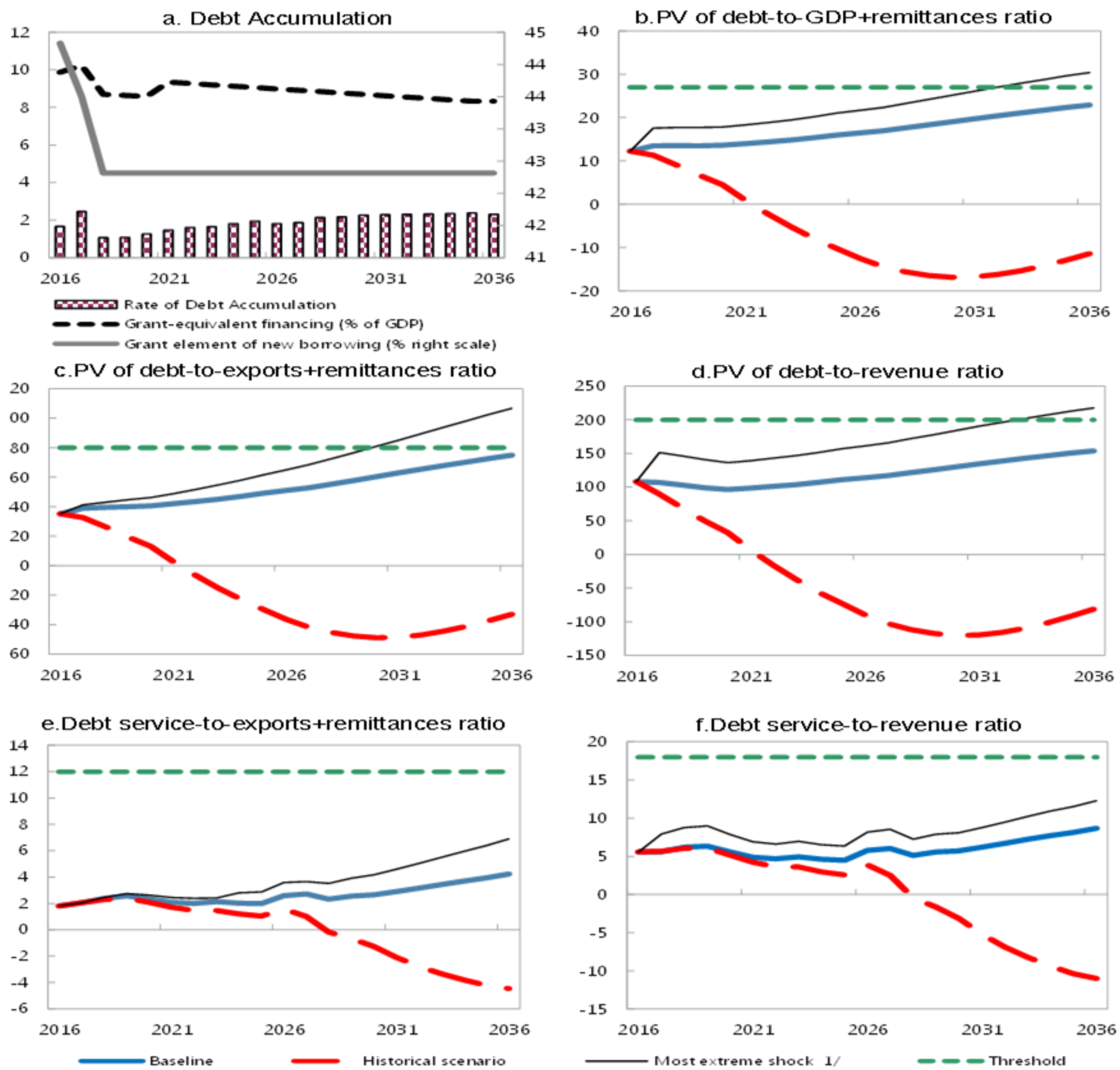
5/ Current-year interest payments divided by previous period debt stock.

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).

Figure 1. Comoros: Indicators of public and Publicly Guaranteed External Debt under Alternatives Scenarios, 2016-2036 1/



Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio on or before 2026. In figure b. it corresponds to a One-time depreciation shock; in c. to a Terms shock; in d. to a One-time depreciation shock; in e. to a Terms shock and in figure f. to a One-time depreciation shock

Table 2. Comoros Sensitivity Analysis for Key Indicators of Public and publicly Guaranteed External Debt, 2016-2036

(In percent)

	Projections							
	2016	2017	2018	2019	2020	2021	**2026**	2036
PV of debt-to-GDP+remittances ratio								
Baseline	12	14	14	14	14	14	**16**	23
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2016-2036 1/	12	11	9	7	5	1	**-13**	-11
A2. New public sector loans on less favorable terms in 2016-2036 2	12	14	15	15	16	16	**21**	33
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2017-2018	12	14	14	14	14	15	**17**	24
B2. Export value growth at historical average minus one standard deviation in 2017-2018 3/	12	14	16	16	16	16	**18**	23
B3. US dollar GDP deflator at historical average minus one standard deviation in 2017-2018	12	14	16	16	16	16	**19**	26
B4. Net non-debt creating flows at historical average minus one standard deviation in 2017-2018 4/	12	13	12	12	12	13	**15**	23
B5. Combination of B1-B4 using one-half standard deviation shocks	12	13	13	14	14	14	**17**	25
B6. One-time 30 percent nominal depreciation relative to the baseline in 2017 5/	12	18	18	18	18	18	**22**	30
PV of debt-to-exports+remittances ratio								
Baseline	35	39	40	40	41	42	**51**	75
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2016-2036 1/	35	33	26	20	13	3	**-36**	-33
A2. New public sector loans on less favorable terms in 2016-2036 2	35	41	43	45	46	49	**65**	107
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2017-2018	35	39	40	40	41	42	**51**	75
B2. Export value growth at historical average minus one standard deviation in 2017-2018 3/	35	43	50	50	51	52	**62**	83
B3. US dollar GDP deflator at historical average minus one standard deviation in 2017-2018	35	39	40	40	41	42	**51**	75
B4. Net non-debt creating flows at historical average minus one standard deviation in 2017-2018 4/	35	37	33	37	37	39	**48**	74
B5. Combination of B1-B4 using one-half standard deviation shocks	35	34	33	36	36	38	**47**	73
B6. One-time 30 percent nominal depreciation relative to the baseline in 2017 5/	35	39	40	40	41	42	**51**	75
PV of debt-to-revenue ratio								
Baseline	108	107	103	99	96	99	**114**	154
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2016-2036 1/	108	90	70	50	32	7	**-89**	-81
A2. New public sector loans on less favorable terms in 2016-2036 2	108	113	112	111	110	115	**145**	219
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2017-2018	108	109	109	105	102	104	**120**	162
B2. Export value growth at historical average minus one standard deviation in 2017-2018 3/	108	113	120	115	111	113	**127**	156
B3. US dollar GDP deflator at historical average minus one standard deviation in 2017-2018	108	116	123	118	114	117	**135**	182
B4. Net non-debt creating flows at historical average minus one standard deviation in 2017-2018 4/	108	105	94	91	88	90	**107**	152
B5. Combination of B1-B4 using one-half standard deviation shocks	108	107	109	105	101	104	**122**	173
B6. One-time 30 percent nominal depreciation relative to the baseline in 2017 5/	108	151	146	141	136	139	**161**	218

Table 2. Comoros Sensitivity Analysis for Key Indicators of Publicly Guaranteed External Debt, 2016-2036 (Continued)

(In percent)

Debt service-to-exports+remittances ratio								
Baseline	2	2	2	3	2	2	**3**	4
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2016-2036 1/	2	2	2	2	2	2	**2**	-4
A2. New public sector loans on less favorable terms in 2016-2036 2	2	2	2	3	3	2	**4**	7
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2017-2018	2	2	2	3	2	2	**3**	4
B2. Export value growth at historical average minus one standard deviation in 2017-2018 3/	2	2	3	3	3	2	**3**	5
B3. US dollar GDP deflator at historical average minus one standard deviation in 2017-2018	2	2	2	3	2	2	**3**	4
B4. Net non-debt creating flows at historical average minus one standard deviation in 2017-2018 4/	2	2	2	3	2	2	**3**	4
B5. Combination of B1-B4 using one-half standard deviation shocks	2	2	2	2	2	2	**2**	4
B6. One-time 30 percent nominal depreciation relative to the baseline in 2017 5/	2	2	2	3	2	2	**3**	4
Debt service-to-revenue ratio								
Baseline	6	6	6	6	6	5	**6**	9
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2016-2036 1/	6	6	6	6	5	4	**4**	-11
A2. New public sector loans on less favorable terms in 2016-2036 2	6	6	6	7	6	6	**8**	14
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2017-2018	6	6	7	7	6	5	**6**	9
B2. Export value growth at historical average minus one standard deviation in 2017-2018 3/	6	6	6	7	6	5	**6**	10
B3. US dollar GDP deflator at historical average minus one standard deviation in 2017-2018	6	6	7	8	7	6	**7**	10
B4. Net non-debt creating flows at historical average minus one standard deviation in 2017-2018 4/	6	6	6	6	5	5	**6**	8
B5. Combination of B1-B4 using one-half standard deviation shocks	6	6	7	7	6	5	**6**	9
B6. One-time 30 percent nominal depreciation relative to the baseline in 2017 5/	6	8	9	9	8	7	**8**	12
Memorandum item:								
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	41	41	41	41	41	41	**41**	41

Sources: Country authorities; and staff estimates and projections.

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 3 Comoros Public Sector Debt Sustainability Framework, Baseline Scenario, 2013-2036

(In percent of GDP, unless otherwise indicated)

	Actual					Estimate					Projections				
	2013	2014	2015	Average 5/	Standard Deviation 5/	2016	2017	2018	2019	2020	2021	2016-21 Average	2026	2036	2022-36 Average
ublic sector debt 1/	18.5	20.2	24.2			25.4	27.7	27.3	26.9	26.8	27.2		30.1	39.2	
of which: foreign-currency denominated	18.5	20.2	24.2			25.4	27.7	27.3	26.9	26.8	27.2		30.1	39.2	
nange in public sector debt	-22.0	1.7	4.0			1.2	2.3	-0.4	-0.4	-0.1	0.3		0.6	0.8	
lentified debt-creating flows	-22.0	0.0	-2.7			4.0	3.3	2.0	1.9	2.5	3.7		5.0	5.4	
Primary deficit	-18.4	0.5	-5.9	-3.2	6.3	5.1	4.4	3.5	3.5	3.9	5.0	4.2	6.5	7.3	6.6
Revenue and grants	43.0	23.9	31.6			22.7	24.3	24.3	24.7	25.2	25.9		25.3	24.2	
of which: grants	27.5	9.4	15.1			8.4	8.3	7.8	7.7	7.6	8.3		7.7	6.5	
Primary (noninterest) expenditure	24.5	24.4	25.7			27.8	28.7	27.8	28.2	29.1	30.9		31.8	31.5	
Automatic debt dynamics	-3.6	-0.5	3.2			-1.1	-1.2	-1.5	-1.6	-1.4	-1.3		-1.5	-1.9	
Contribution from interest rate/growth differential	-2.5	-0.7	-0.6			-1.0	-1.1	-1.4	-1.4	-1.4	-1.3		-1.5	-1.9	
of which: contribution from average real interest rate	-1.1	-0.3	-0.4			-0.5	-0.3	-0.3	-0.3	-0.3	-0.3		-0.3	-0.4	
of which: contribution from real GDP growth	-1.4	-0.4	-0.2			-0.5	-0.8	-1.1	-1.1	-1.0	-1.0		-1.1	-1.5	
Contribution from real exchange rate depreciation	-1.1	0.1	3.8			-0.1	-0.1	-0.1	-0.2	-0.1	0.1		...	...	
Other identified debt-creating flows	0.0	0.0	0.0			0.0	0.0	0.0	0.0	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	0.0			0.0	0.0	0.0	0.0	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	
esidual, including asset changes	-0.1	1.7	6.7			-2.7	-0.9	-2.4	-2.3	-2.6	-3.3		-4.4	-4.6	
ther Sustainability Indicators															
V of public sector debt	...	...	14.8			15.6	17.1	17.0	16.9	17.0	17.4		20.1	27.2	
of which: foreign-currency denominated	...	...	14.8			15.6	17.1	17.0	16.9	17.0	17.4		20.1	27.2	
of which: external	...	...	14.8			15.6	17.1	17.0	16.9	17.0	17.4		20.1	27.2	
V of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...	
ross financing need 2/	-18.1	0.8	-5.8			5.9	5.3	4.5	4.5	4.9	5.8		7.5	8.9	
V of public sector debt-to-revenue and grants ratio (in percent)	...	...	46.9			68.5	70.2	70.0	68.2	67.3	67.0		79.5	112.2	
V of public sector debt-to-revenue ratio (in percent)	...	...	89.7			108.4	106.8	103.1	99.0	96.3	98.6		114.1	153.8	
of which: external 3/	...	...	89.7			108.4	106.8	103.1	99.0	96.3	98.6		114.1	153.8	
ebt service-to-revenue and grants ratio (in percent) 4/	0.7	1.0	0.5			3.5	3.7	4.2	4.4	3.9	3.3		4.0	6.3	
ebt service-to-revenue ratio (in percent) 4/	2.0	1.7	0.9			5.6	5.6	6.2	6.3	5.6	4.9		5.8	8.7	
rimary deficit that stabilizes the debt-to-GDP ratio	3.6	-1.2	-9.9			3.9	2.1	3.9	3.9	4.0	4.6		5.8	6.5	
ey macroeconomic and fiscal assumptions															
eal GDP growth (in percent)	3.5	2.0	1.0	1.8	0.9	2.2	3.3	4.0	4.0	4.0	4.0	3.6	4.0	4.0	4.0
verage nominal interest rate on forex debt (in percent)	0.2	0.1	0.2	0.5	0.3	0.7	0.9	0.9	1.0	1.0	1.0	0.9	1.1	1.0	1.1
verage real interest rate on domestic debt (in percent)	...	...	...	...	...	...	...	...	...	...	...		...	...	...
eal exchange rate depreciation (in percent, + indicates depreciation)	-2.9	0.8	19.4	1.4	8.4	-0.6	...	...	...	...	...	...	...	...	...
flation rate (GDP deflator, in percent)	3.1	1.9	2.1	3.6	1.4	2.9	2.0	2.1	2.2	2.3	2.3	2.3	2.3	2.3	2.3
rowth of real primary spending (deflated by GDP deflator, in percent)	2.5	1.4	6.5	1.1	2.1	10.5	6.7	0.4	5.7	7.5	10.2	6.8	4.6	3.9	4.1
rant element of new external borrowing (in percent)	...	...	...	...	...	44.3	43.5	42.3	42.3	42.3	42.3	42.8	42.3	42.3	...

ources: Country authorities; and staff estimates and projections.

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

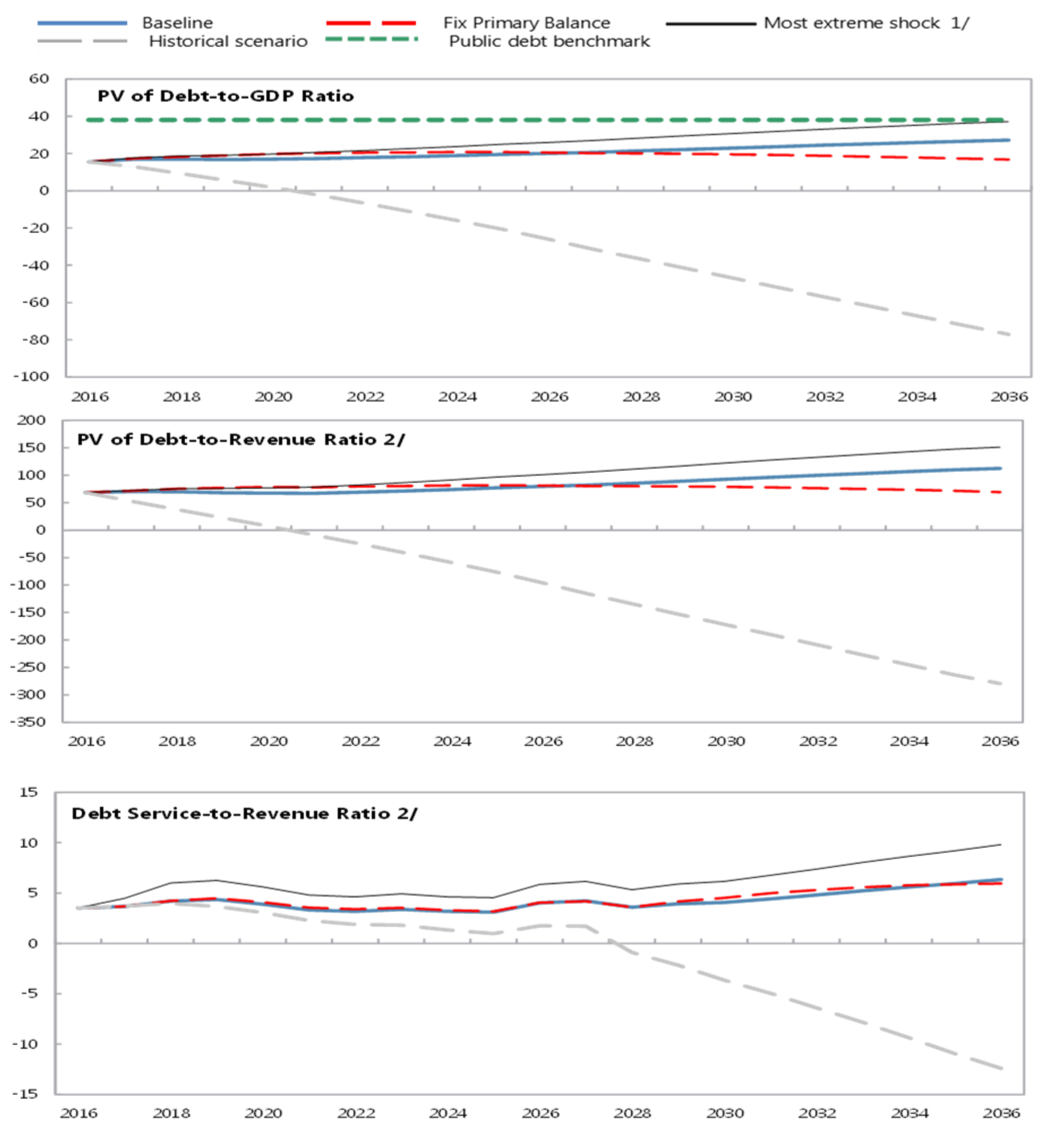
Gross financing need is defined as the primary deficit plus debt service plus the stock of short-term debt at the end of the last period.

Revenues excluding grants.

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

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

Figure 2. Comoros: Indicators of Public Debt Under Alternative Scenarios, 2016-2036 1/



Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio on or before 2026.

2/ Revenues are defined inclusive of grants.

Table 4. Comoros: Sensitivity Analysis for Key Indicators of Public Debt 2016-2036

	Projections							
	2016	2017	2018	2019	2020	2021	2026	2036
PV of Debt-to-GDP Ratio								
Baseline	16	17	17	17	17	17	20	27
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	16	13	9	6	2	-2	-26	-77
A2. Primary balance is unchanged from 2016	16	17	18	19	20	20	21	17
A3. Permanently lower GDP growth 1/	16	17	17	17	17	18	22	32
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2017-2018	16	18	19	19	20	21	26	37
B2. Primary balance is at historical average minus one standard deviations in 2017-2018	16	16	16	16	16	16	19	27
B3. Combination of B1-B2 using one half standard deviation shocks	16	15	13	13	14	15	20	33
B4. One-time 30 percent real depreciation in 2017	16	23	22	21	21	21	22	25
B5. 10 percent of GDP increase in other debt-creating flows in 2017	16	23	23	22	22	23	25	30
PV of Debt-to-Revenue Ratio 2/								
Baseline	69	70	70	68	67	67	80	112
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	69	53	38	22	7	-9	-96	-279
A2. Primary balance is unchanged from 2016	69	72	75	77	79	78	81	69
A3. Permanently lower GDP growth 1/	69	70	70	69	68	69	85	131
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2017-2018	69	72	76	76	77	78	101	151
B2. Primary balance is at historical average minus one standard deviations in 2017-2018	69	67	66	64	64	64	76	110
B3. Combination of B1-B2 using one half standard deviation shocks	69	60	53	54	55	57	80	134
B4. One-time 30 percent real depreciation in 2017	69	94	91	87	83	81	86	104
B5. 10 percent of GDP increase in other debt-creating flows in 2017	69	94	93	90	88	87	98	123
Debt Service-to-Revenue Ratio 2/								
Baseline	4	4	4	4	4	3	4	6
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	4	4	4	4	3	2	2	-12
A2. Primary balance is unchanged from 2016	4	4	4	4	4	4	4	6
A3. Permanently lower GDP growth 1/	4	4	4	4	4	3	4	7
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2017-2018	4	4	4	5	4	4	4	8
B2. Primary balance is at historical average minus one standard deviations in 2017-2018	4	4	4	4	4	3	4	6
B3. Combination of B1-B2 using one half standard deviation shocks	4	4	4	4	4	3	4	7
B4. One-time 30 percent real depreciation in 2017	4	4	6	6	6	5	6	10
B5. 10 percent of GDP increase in other debt-creating flows in 2017	4	4	5	5	4	4	4	8

Sources: Country authorities; and staff estimates and projections.
1/ Assumes that real GDP growth is at baseline minus one standard deviation divided by the square root of the length of the projection period.
2/ Revenues are defined inclusive of grants.