

DJIBOUTI: JOINT BANK-FUND DEBT SUSTAINABILITY ANALYSIS

This DSA, prepared in close cooperation between the Fund and Bank staff, updates the previous DSA prepared in September 2005. The results show that despite a realistic high-investment, moderate-growth baseline scenario, the long-term risk of debt distress is high. Specifically, the NPV of the debt-to-GDP ratio remains well above the policy-dependent threshold over the entire projection period. Furthermore, stress tests indicate that Djibouti remains vulnerable to adverse shocks, notably the risk of lower-than-projected growth of GDP and exports. It is therefore important that the authorities focus their efforts on achieving prudent macroeconomic management and maintaining a careful approach to new borrowing, obtaining external assistance in the form of grants or highly concessional loans.

I. DATA AND METHODOLOGY

This DSA focuses on external public and publicly-guaranteed debt, and on domestic government debt. While data on private debt are not available, it is believed to be negligible, although it could increase in relation to forthcoming foreign private investment. Domestic government debt consists mainly of domestic arrears towards employees, public enterprises, social security funds, and private suppliers, and also includes past loans from the banking system. Fiscal sustainability is assessed excluding government-guaranteed debt of public enterprises that is not in arrears (i.e., explicit contingent liabilities) from the definition of the public sector. However, in assessing vulnerability to adverse shocks, the government's contingent liabilities were subjected to sensitivity analysis (Appendix Table 16; Appendix Figure 6).

II. CHANGES COMPARED TO THE DSA IN THE 2005 ARTICLE IV CONSULTATIONS

The 2005 DSA for Djibouti included a baseline scenario based on relatively low foreign direct investment but wide-ranging structural reforms that enabled the country to achieve sustained growth rates, and an alternative low-investment, low-growth scenario. Under the assumptions for the baseline scenario, the debt sustainability indicators improved over time, but vulnerabilities appeared under stress test conditions.

The present DSA incorporates recent economic developments including large foreign direct investment (FDI), that are projected to put Djibouti on a growth-path slightly lower than the one under the baseline scenario in the 2005 DSA. These changes include large FDI flows to finance new port and transport infrastructure and the expansion of port-services, the development of a new free-trade zone, and the development of tourism, mining, and cattle trade (Box 3). The present DSA does not include an alternative reform scenario which would put the country on a higher growth path.

III. DJIBOUTI'S DEBT SITUATION

Djibouti has continued to incur arrears—albeit mostly temporary—in servicing its external debt obligations reflecting weaknesses in public cash management. While new arrears outstanding at end-2005 were paid in 2006, the stock of outstanding arrears has increased from \$31.5 million in 2005 to \$33.2 million in 2006, of which \$3 million were incurred in December 2006.

In February 2006, an agreement was reached with Italy concerning the restructuring of debt in the framework of the May 2000 Paris Club agreement.¹ The agreement, which covers debt contracted before March 1998, entails the transformation of debt service obligations into a specified list of projects of social interest. This effectively reduced Djibouti's external debt by about \$15 million.²

At end-2006, the total stock of external debt was estimated at \$427 million, equivalent to 56 percent of GDP (Appendix Table 12). Almost all borrowing is from official lenders, and most of it is concessional. The largest creditors are the World Bank (\$125 million) and the African Development Bank (AfDB) (\$94 million), followed by Kuwait and Saudi Arabia (\$23 and \$21 million respectively); 30 percent of total debt is from Arab creditors, and about one-third (\$152 million) is government-guaranteed debt of public enterprises.

Over the next five years, disbursements of external loans are projected to increase to an annual average of \$110 million, bringing the total external debt to \$869 million, equivalent to 71 percent of GDP. The new borrowing comes in the wake of the November 2005 Round Table of Arab creditors, resulting in pledges of \$370 million to finance investment in infrastructure and social development to be disbursed over the next five years. In addition, an AfDB loan of \$25 million is expected for the financing of the interconnection with the Ethiopian power grid.

Government debt outstanding at end-2006 amounted to about \$467 million, equivalent to 61 percent of GDP. This included external debt toward official creditors for about \$295 million (of which some \$20 million is external government-guaranteed debt in arrears), and domestic public debt of \$172 million. Most of this debt consists of arrears toward public employees, pension funds, public enterprises, and other suppliers for about \$158 million (compared to \$156.5 million in 2005), scheduled to be repaid by 2020.

¹ Djibouti signed the Paris Club agreement on May 25, 2000, and receives treatment under Classic terms, which are the standard terms applied to a debtor country coming to the Paris Club. Specifically, credits (whether ODA or non-ODA) are rescheduled at the appropriate market rate with a repayment profile negotiated on a case-by-case basis. In Djibouti's case, this involves treatment of maturities falling due from October 31, 1999, up to June 30, 2002.

² The Paris Club agreement also covers debt owed to France and Spain; an agreement with France was reached in 2003, whereas negotiations with Spain are still under way.

Appendix Table 12. Djibouti: Stock of Debt at End-2006
(In millions of dollars)

1. Domestic government debt	171.6
Debt toward non-bank entities	161.7
<i>Of which: Arrears</i>	157.8
Outstanding credit from the banking system	9.9
2. External government debt	275.4
Debt toward bilateral creditors (excl. arrears)	32.7
Debt toward multilateral creditors (excl. arrears)	229.5
Debt in arrears	13.2
3. Government-guaranteed external debt	152.0
Debt toward bilateral creditors (excl. arrears)	52.1
Debt toward multilateral creditors (excl. arrears)	79.9
Debt in arrears (3.1)	20
Memorandum items:	
Total external debt (2+3)	427.4
Total government debt (1+2+3.1)	467.0

Sources: Djibouti authorities; and Fund staff estimates.

IV. EVALUATION OF EXTERNAL DEBT SUSTAINABILITY

The baseline scenario, developed on a realistic set of assumptions about economic policies and outcomes (see Appendix Box 5), shows that, although Djibouti's large external debt may be manageable, there is a high risk of debt distress. The analysis was conducted under the debt sustainability framework for low-income countries (LICs). According to the World Bank CPIA rating, Djibouti's policies and institutions are assessed as those corresponding to a "poor performer." The debt-burden thresholds for countries in this category are: (a) NPV of the debt-to-exports of goods and services of 100 percent; (b) NPV of the debt-to-GDP of 30 percent; and (c) NPV of the debt-to-fiscal revenues of 200 percent. The relevant debt service thresholds are: (a) 15 percent of exports of goods and services and (b) 25 percent of revenues.

1. **Under the baseline scenario, the NPV of the external debt-to-GDP ratio is projected to breach the policy-dependent threshold throughout the period,** peaking at 60 percent in 2010 and remaining above 40 percent until at least 2027. The risks that this poses for external solvency are mitigated somewhat by the growth in financial inflows associated with the projected strong increase in exports. Hence, the NPV of the external of debt-to-export ratio is projected to decline from 125 percent in 2006 to 88 percent in 2007 and then decrease further to about 46 percent by 2027, well below the 100 percent threshold. Meanwhile the external debt service-to-export ratio (equal to 9 percent in 2006) is projected to remain comfortably below the 15 percent policy-dependent threshold (Appendix Table 13) throughout the projection period.

Appendix Box 5. Macroeconomic Assumptions

Real GDP is projected to grow by 6–7 percent a year in the medium term and by 3½–5 percent per year in the long run, spurred by foreign direct investment (FDI) and by exports of goods and services. It is assumed that large-scale investment in transport infrastructure and in the free-trade zone (FTZ), as well as progress in the implementation of the COMESA customs area, will strengthen Djibouti’s integration with the other economies in the region and transform it into a regional trading hub, attracting further flows of foreign direct investment and enhancing the country’s export and productive capacity in the long run. A large share of the new borrowing over 2006–11 is expected to finance social projects that are projected to have an impact on growth only in the very long run.

Exports of goods and services are projected to increase threefold in value between 2006 and 2011, as a result of services related to the expansion of the port and of tourism, as well as of exports of cattle and the free-trade zone; in the long run, exports are projected to continue growing by 7–8 percent a year.

The **current account deficit** is projected to rise to 14–18 percent of GDP between 2007 and 2011, driven by a surge in investment-related imports, and to gradually decline to about 8 percent by 2027 as a result of sustained export growth. It is however largely financed by the projected high flow of FDI.

The **overall fiscal deficit** is projected to temporarily increase in the medium term owing to the restructuring of port management, but the restraint in expenditure announced by the authorities is expected to restore balance by 2011. In the long run, the fiscal deficit is projected to increase to 3–3½ percent of GDP as tax revenues are projected to decline, partly as a result of tax exemptions granted in the free-trade zone. Spending would evolve in line with revenue, but, owing to rigidities in several expenditure areas, the shortfall in revenue will need to be compensated in part by additional external financing. Domestic arrears to public employees, pension funds, public enterprises, and private suppliers, currently estimated to \$158 million, are projected to be repaid by 2020 in line with the schedule announced by the authorities.

Projections of **external borrowing terms** incorporate authorities’ data for identified project loans, and are based on the assumption that additional loans would continue to be extended by official creditors to the government (or under government guarantee) on concessional terms. The large debt disbursements between 2007 and 2011 will finance mainly social and infrastructure projects that have only a long-term impact on growth.

The less favorable outcome obtained from the stress tests reflect the high vulnerability of external debt solvency to adverse shocks. Under the historical scenario—which assumes that key macroeconomic variables evolve in line with the record of the past seven years, before the current increase in foreign investment started to stimulate growth and trade—the NPV of the external debt-to-GDP ratio peaks at 73 percent in 2012 and then remains above 50 percent. Additional tests assessing the sensitivity of debt sustainability indicators to less favorable lending conditions—specifically, export and real GDP growth, and inflation and exchange rate developments—also yield less favorable sustainability indicators (Appendix Table 14; Appendix

Figure 5). Under the “most extreme stress test”—corresponding to a one-time 30 percent nominal depreciation in 2008, equivalent to a 22 percent decline in nominal GDP—the NPV of the external debt-to-GDP ratio would be about 20 percentage points higher than in the baseline, and the NPV of the external debt-to-exports ratio would breach the 100 percent threshold until 2017.

V. EVALUATION OF FISCAL SUSTAINABILITY, 2007–27

Under baseline assumptions, the NPV of the government debt-to-GDP ratio is projected to decline below the policy-dependent threshold only by 2015. The NPV of the government debt-to-revenue, which is projected to stay below the 200 percent threshold, keeps an upward trend after 2020. The government debt service-to-revenue ratio, instead, is projected to remain well below the 25 percent threshold (Appendix Table 15). The stock of domestic debt arrears is scheduled to be repaid only by 2020.

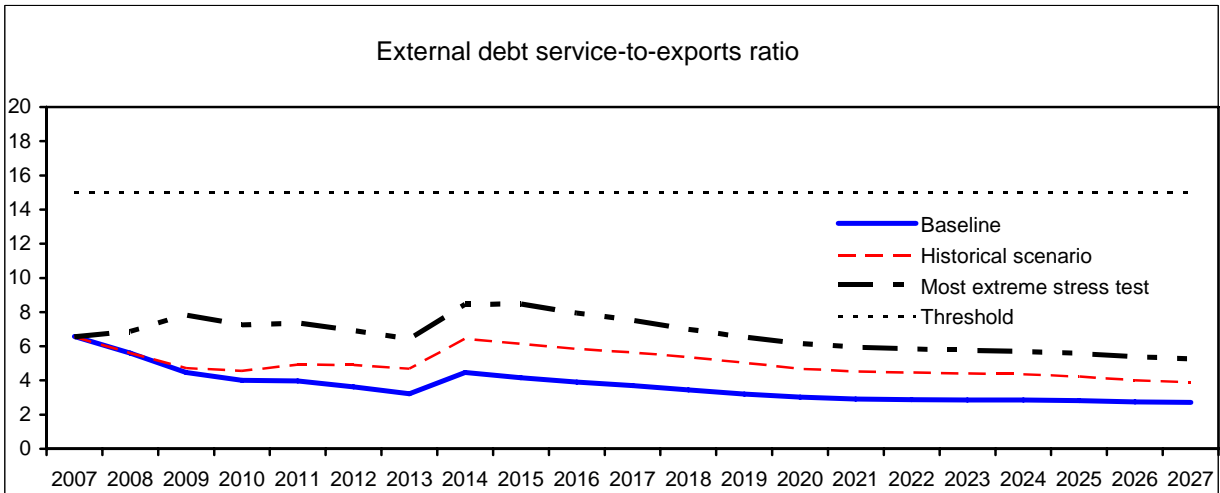
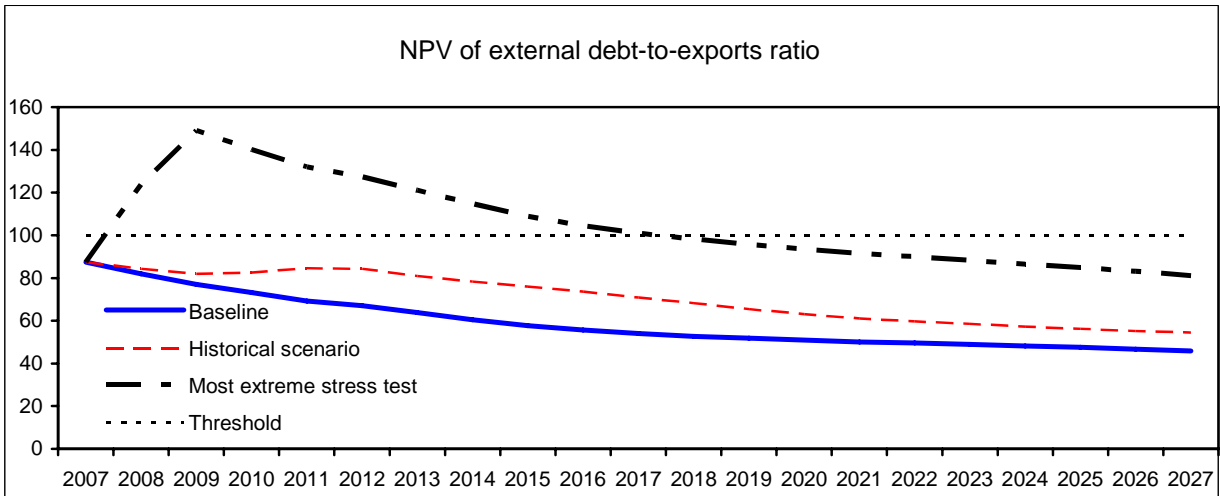
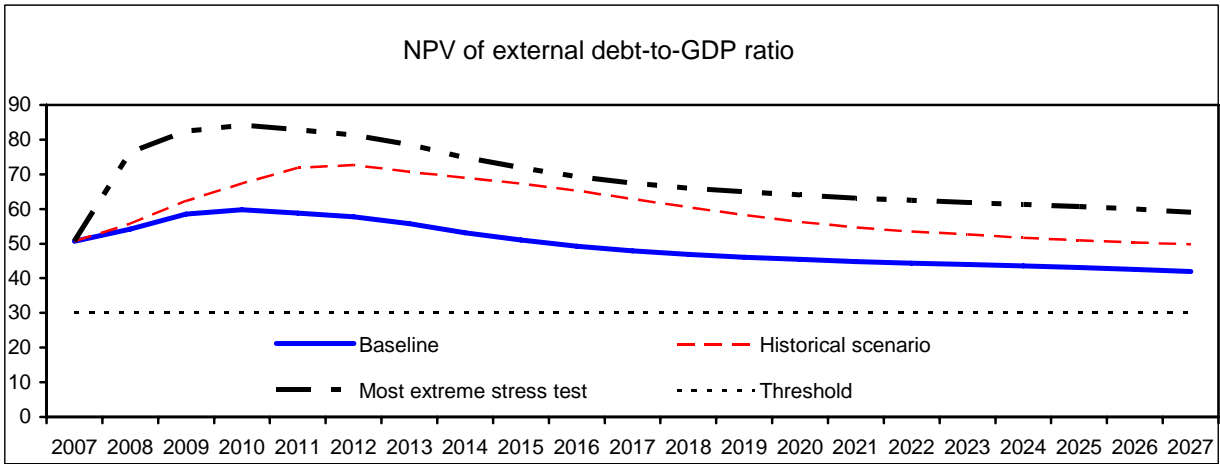
The prospects of long-term fiscal sustainability could substantially worsen under adverse circumstances simulated by the stress tests. Under the “most extreme” stress test (featuring real GDP growth at its historical average minus one standard deviation) the NPV of the debt-to-GDP ratio would remain above 35 percent throughout the period, increasing after 2020, and the NPV of the debt-to-revenue ratio would break the 200 percent threshold in 2025. Under another stress test—assuming that the government primary balance would remain at its projected 2007 level—the NPV of the government debt-to-revenue ratio would increase above 150 percent by 2027, again raising concerns about long-term sustainability. If instead both real GDP growth and the primary deficit remained at the average level of the past seven years, the outcome would closely reflect projections under the baseline scenario (Appendix Table 16; Appendix Figure 6).

The contingent liabilities related to the government-guaranteed external debt pose a major risk for fiscal sustainability. If the government was called to honor all these guarantees (equivalent to 1-2 percent of GDP per year) until 2027, the NPV of the government debt-to-GDP ratio would remain almost always above the 30 percent threshold and keep an upward trend after 2020, and the NPV of the government debt-to-revenue ratio would rise to 170 percent by 2027.

VI. CONCLUSIONS

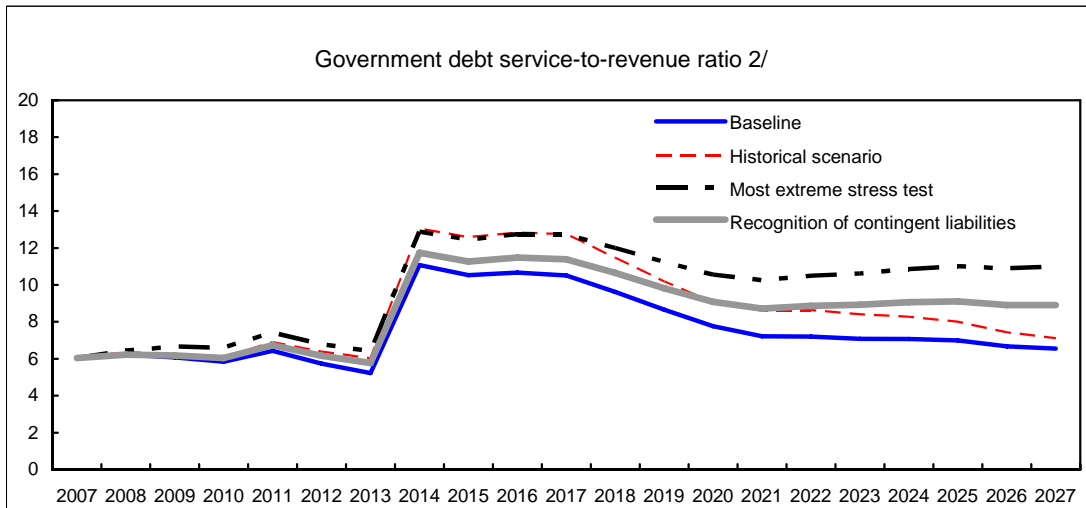
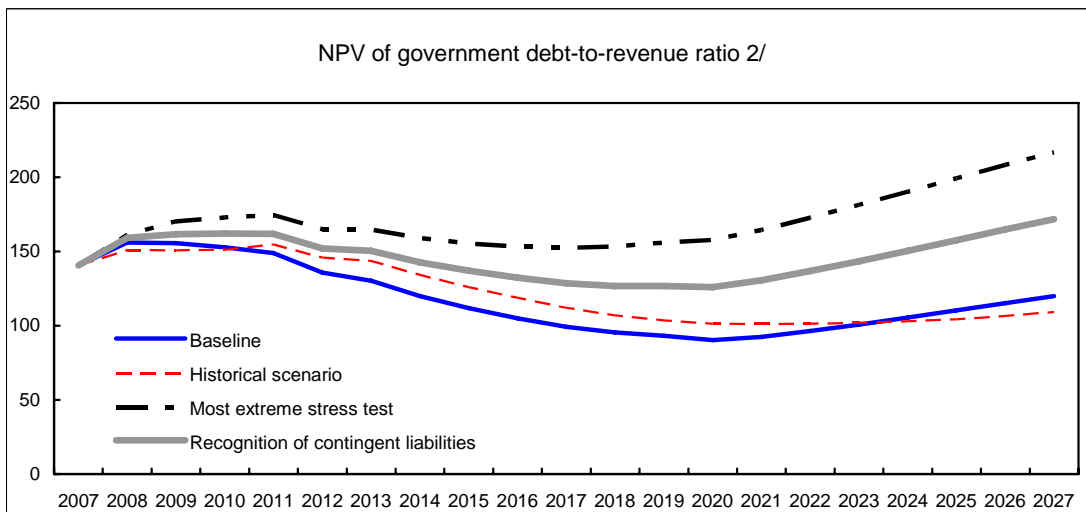
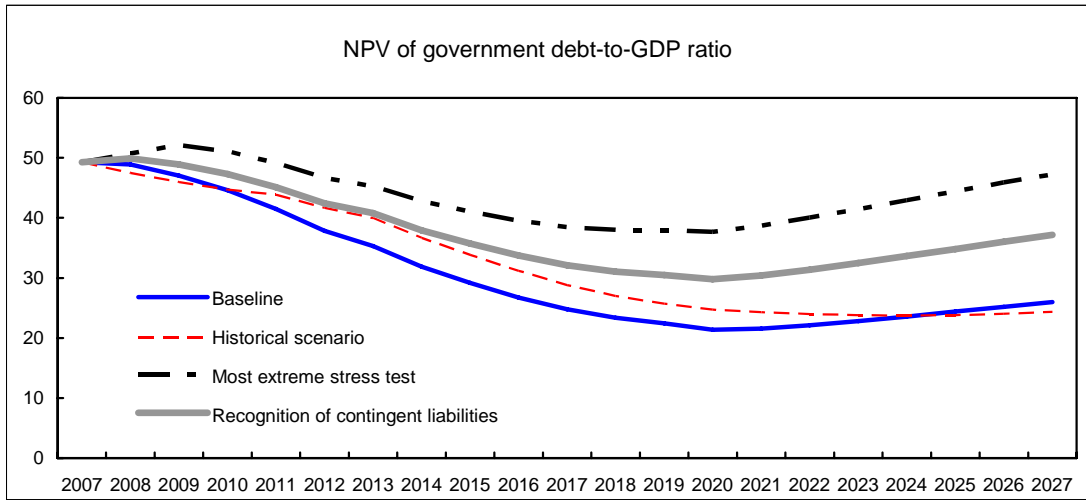
While the updated DSA for Djibouti projects moderate GDP and export growth rates, largely propelled by high levels of foreign direct investment, the country’s risk of debt distress is high. In addition to a sustained and significant breach of the policy-dependent threshold for the NPV of debt-to-GDP ratio, Djibouti has incurred external arrears over the past few years. Moreover, substantial domestic arrears have accumulated, equal to 20 percent of GDP. Unless Djibouti follows prudent macroeconomic policies—supported by a shift in the composition of external financing from concessional loans to grants, combined with concerted efforts to clear substantial arrears and lower domestic debt—the country’s vulnerability to adverse shocks will increase. Given the continuing risks, development of a comprehensive public debt management strategy, taking into account public enterprises and contingent liabilities, should be a priority.

Appendix Figure 5. Djibouti: Indicators of Public and Publicly Guaranteed External Debt Under Alternative Scenarios, 2007–27
(In percent)



Source: Staff projections and simulations.

Appendix Figure 6. Djibouti: Indicators of Public Debt Under Alternative Scenarios, 2007–27 1/



Source: Staff projections and simulations.
 1/ Most extreme stress test is test that yields highest ratio in 2016.
 2/ Revenue including grants.

Appendix Table 13. Djibouti: External Debt Sustainability Framework, Baseline Scenario, 2003–27 1/
(In percent of GDP, unless otherwise indicated)

	Actual				Historical Average 6/	Standard Deviation 6/	Projections										
	2003	2004	2005	2006			2007	2008	2009	2010	2011	2012	2007–12 Average	2017	2022	2027	2013–27 Average
External debt (nominal) 1/	66.8	68.4	60.5	55.5			58.2	64.3	71.3	73.1	71.0	68.8	67.8	61.6	59.7	57.9	61.2
<i>Of which: public and publicly guaranteed (PPG)</i>	66.8	68.4	60.5	55.5			58.2	64.3	71.3	73.1	71.0	68.8	67.8	61.6	59.7	57.9	61.2
Change in external debt	8.8	1.6	-7.9	-5.0			2.7	6.2	6.9	1.8	-2.1	-2.2	2.2	-1.0	-0.2	-0.6	-0.7
Identified net debt-creating flows	-8.6	-8.3	-8.4	-10.0			-4.7	-0.9	-1.6	-4.2	-6.5	-1.5	-3.2	1.9	1.5	0.9	1.2
Non-interest current account deficit	-4.1	0.4	-2.1	8.0	2.3	4.5	13.0	16.0	16.9	14.8	12.5	12.9	14.4	9.6	7.7	6.6	8.6
Deficit in balance of goods and services	8.8	13.2	10.3	17.4			20.4	24.0	22.6	19.3	17.4	17.6	20.2	13.1	10.3	8.7	11.7
Exports	40.3	37.6	40.6	39.8			58.0	66.1	76.0	81.7	84.9	86.2	75.5	88.7	89.6	91.5	89.4
Imports	49.1	50.8	50.9	57.3			78.4	90.1	98.6	101.0	102.3	103.7	95.7	101.8	99.8	100.2	101.1
Net current transfers (negative = inflow)	-4.2	-2.2	-2.0	2.4	-2.1	2.1	1.2	1.1	0.9	1.0	1.0	1.1	1.0	1.2	1.3	1.3	1.2
Other current account flows (negative = net inflow)	-8.7	-10.7	-10.4	-11.8			-8.6	-9.0	-6.6	-5.5	-5.8	-5.7	-6.9	-4.7	-3.9	-3.4	-4.3
Net FDI (negative = inflow)	-2.3	-5.8	-3.1	-14.1	-3.5	4.7	-16.1	-14.7	-15.4	-15.9	-16.2	-12.3	-15.1	-6.5	-5.2	-4.9	-6.3
Endogenous debt dynamics 2/	-2.2	-2.9	-3.2	-3.9			-1.5	-2.1	-3.1	-3.2	-2.8	-2.2	-2.5	-1.1	-0.9	-0.8	-1.1
Contribution from nominal interest rate	0.7	0.9	0.9	0.9			0.9	0.9	1.0	1.1	1.2	1.2	1.0	1.1	1.2	1.2	1.2
Contribution from real GDP growth	-1.8	-1.9	-2.0	-2.7			-2.5	-3.1	-4.1	-4.3	-3.9	-3.3	-3.5	-2.3	-2.1	-1.9	-2.2
Contribution from price and exchange rate changes	-1.1	-2.0	-2.1	-2.1			...	...	...	...	...	...	...	...	...	...	...
Residual (3-4) 3/	17.4	10.0	0.5	5.0			7.4	7.0	8.5	6.1	4.4	-0.7	5.4	-2.9	-1.7	-1.5	-1.9
<i>Of which: exceptional financing</i>	-4.7	-1.5	0.0	-2.2			-0.4	-0.4	-0.4	-0.3	-0.3	-1.5	-0.6	-1.1	-0.9	-0.7	-1.0
NPV of external debt 4/	58.7	55.9	52.3	49.7			50.7	54.2	58.5	59.8	58.8	57.8	56.6	47.9	44.4	42.0	46.7
In percent of exports	145.6	148.6	128.7	124.8			87.4	81.9	77.0	73.2	69.3	67.0	76.0	54.0	49.6	45.8	52.3
NPV of PPG external debt	58.7	55.9	52.3	49.7			50.7	54.2	58.5	59.8	58.8	57.8	56.6	47.9	44.4	42.0	46.7
In percent of exports	145.6	148.6	128.7	124.8			87.4	81.9	77.0	73.2	69.3	67.0	76.0	54.0	49.6	45.8	52.3
Debt service-to-exports ratio (in percent)	8.4	9.4	9.6	9.0			6.6	5.6	4.5	4.0	4.0	3.6	4.7	3.7	2.9	2.7	3.3
PPG debt service-to-exports ratio (in percent)	8.4	9.4	9.6	9.0			6.6	5.6	4.5	4.0	4.0	3.6	4.7	3.7	2.9	2.7	3.3
Total gross financing need (billions of U.S. dollars)	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.2	0.1
Non-interest current account deficit that stabilizes debt ratio	-12.9	-1.2	5.8	13.0			10.3	9.8	10.0	13.0	14.6	15.1	12.1	10.6	7.9	7.2	9.3
Key macroeconomic assumptions																	
Real GDP growth (in percent)	3.2	3.0	3.2	4.8	2.7	1.3	4.8	5.7	7.0	6.6	5.9	5.1	5.9	3.9	3.7	3.6	3.9
GDP deflator in U.S. dollar terms (change in percent)	2.0	3.1	3.1	3.6	2.4	1.7	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Effective interest rate (percent) 5/	1.2	1.5	1.4	1.6	1.5	0.2	1.8	1.7	1.7	1.7	1.7	1.8	1.7	2.0	2.1	2.1	2.0
Growth of exports of G&S (U.S. dollar terms, in percent)	11.0	-0.9	14.8	6.5	5.2	7.1	57.8	24.8	27.3	18.6	14.0	10.4	25.5	7.6	7.4	7.7	8.0
Growth of imports of G&S (U.S. dollar terms, in percent)	19.2	9.8	6.6	22.1	6.5	10.5	48.4	25.8	21.2	13.0	11.1	10.3	21.6	7.3	6.9	7.3	7.3
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	...	27.5	26.6	25.6	25.3	24.8	31.1	26.8	36.8	36.8	36.8	36.3
<i>Memorandum item:</i>																	
Nominal GDP (billions of U.S. dollars)	0.6	0.7	0.7	0.8			0.8	0.9	1.0	1.1	1.2	1.3		2.0	2.8	4.0	2.5

Source: Staff simulations.

1/ Includes both public and private sector external debt.

2/ Derived as $[r - g - r(1+g)] / (1+g+r)$ 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 NPV 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 ten years, subject to data availability.

Appendix Table 14. Djibouti: Sensitivity Analyses for Key Indicators of Public and Publicly Guaranteed External Debt, 2007–27
(In percent)

	Projections												
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2026	2027
NPV of debt-to-GDP ratio													
Baseline	51	54	59	60	59	58	56	53	51	49	48	43	42
A. Alternative scenarios													
A1. Key variables at their historical averages in 2007–26 1/	51	56	62	67	72	73	71	69	67	65	63	50	50
A2. New public sector loans on less favorable terms in 2007–26 2/	51	60	68	71	70	69	69	67	66	66	65	68	68
B. Bound tests													
B1. Real GDP growth at historical average minus one standard deviation in 2008–09	51	57	64	66	65	64	61	59	56	54	53	47	46
B2. Export value growth at historical average minus one standard deviation in 2008–09 3/	51	64	68	68	67	65	63	60	58	55	53	45	44
B3. US dollar GDP deflator at historical average minus one standard deviation in 2008–09	51	56	62	63	62	61	59	56	54	52	51	45	45
B4. Net non-debt creating flows at historical average minus one standard deviation in 2008	51	62	75	75	73	72	69	66	63	60	58	47	46
B5. Combination of B1-B4 using one-half standard deviation shocks	51	64	71	72	71	69	67	64	61	59	57	50	49
B6. One-time 30 percent nominal depreciation relative to the baseline in 2008 5/	51	76	82	84	83	81	79	75	72	69	67	60	59
NPV of debt-to-exports ratio													
Baseline	87	82	77	73	69	67	64	60	58	56	54	47	46
A. Alternative scenarios													
A1. Key variables at their historical averages in 2007–26 1/	87	84	82	83	85	84	81	78	76	74	71	55	54
A2. New public sector loans on less favorable terms in 2007–26 2/	87	91	89	87	83	80	79	77	75	74	74	74	74
B. Bound tests													
B1. Real GDP growth at historical average minus one standard deviation in 2008–09	87	82	77	73	69	67	64	60	58	56	54	47	46
B2. Export value growth at historical average minus one standard deviation in 2008–09 3/	87	124	149	140	132	127	121	115	109	105	101	83	81
B3. US dollar GDP deflator at historical average minus one standard deviation in 2008–09	87	82	77	73	69	67	64	60	58	56	54	47	46
B4. Net non-debt creating flows at historical average minus one standard deviation in 2008	87	94	98	92	86	83	79	75	71	68	66	52	51
B5. Combination of B1-B4 using one-half standard deviation shocks	87	113	127	121	114	110	105	99	94	91	88	74	73
B6. One-time 30 percent nominal depreciation relative to the baseline in 2008 5/	87	82	77	73	69	67	64	60	58	56	54	47	46
Debt service ratio													
Baseline	6.6	5.6	4.5	4.0	4.0	3.6	3.2	4.5	4.2	3.9	3.7	2.7	2.7
A. Alternative scenarios													
A1. Key variables at their historical averages in 2007–26 1/	7	6	5	5	5	5	5	6	6	6	6	4	4
A2. New public sector loans on less favorable terms in 2007–26 2/	7	5	5	4	5	6	6	6	6	6	5	5	1
B. Bound tests													
B1. Real GDP growth at historical average minus one standard deviation in 2008–09	7	5	4	4	4	4	4	5	5	4	4	3	3
B2. Export value growth at historical average minus one standard deviation in 2008–09 3/	7	7	8	7	7	7	6	8	8	8	8	5	5
B3. US dollar GDP deflator at historical average minus one standard deviation in 2008–09	7	5	4	4	4	4	4	5	5	4	4	3	3
B4. Net non-debt creating flows at historical average minus one standard deviation in 2008	7	5	5	5	5	4	4	5	5	5	5	3	3
B5. Combination of B1-B4 using one-half standard deviation shocks	7	7	7	6	7	6	6	8	7	7	7	5	5
B6. One-time 30 percent nominal depreciation relative to the baseline in 2008 5/	7	5	4	4	4	4	4	5	5	4	4	3	3
Memorandum item:													
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	32	31	30	29	27	26	25	25	24	23	23	16	15

Source: Staff 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.

Appendix Table 15. Djibouti: Public Sector Debt Sustainability Framework, Baseline Scenario, 2003–27
(In percent of GDP, unless otherwise indicated)

	Actual				Historical Average 5/	Standard Deviation 5/	Projections										
	2003	2004	2005	2006			2007	2008	2009	2010	2011	2012	2007–12 Average	2017	2022	2027	2013–27 Average
Public sector debt 1/	70.0	70.1	64.4	61.0			60.6	61.4	59.4	56.3	51.8	46.6	56.0	35.4	33.6	35.6	35.8
<i>Of which: foreign-currency denominated</i>	38.0	39.8	36.1	34.5			36.7	40.2	40.6	39.6	36.8	34.2	38.0	31.7	33.6	35.6	33.3
Change in public sector debt	6.6	0.1	-5.7	-3.4			-0.5	0.9	-2.0	-3.2	-4.5	-5.2	-2.4	-1.2	0.5	0.2	-0.7
Identified debt-creating flows	-1.2	-2.4	-4.5	-2.7			-1.4	0.1	-2.7	-3.7	-5.1	-3.7	-2.7	-0.2	1.2	0.8	0.1
Primary deficit	1.9	1.6	-0.7	1.9	1.5	1.1	2.9	4.9	2.8	1.3	-0.7	0.0	1.9	1.8	2.8	2.5	2.1
Revenue and grants	34.0	35.6	37.1	35.0			35.0	31.4	30.2	29.2	27.9	27.9	30.3	25.0	23.0	21.6	24.0
<i>Of which: grants</i>	6.0	6.8	6.2	3.9			5.7	3.8	3.8	3.4	3.1	3.9	3.9	2.9	2.3	1.8	2.6
Primary (noninterest) expenditure	36.0	37.2	36.4	36.9			37.9	36.2	33.0	30.5	27.2	27.9	32.1	26.8	25.8	24.2	26.1
Automatic debt dynamics	-2.8	-3.7	-3.8	-4.6			-4.3	-4.7	-5.4	-5.0	-4.4	-3.7	-4.6	-2.1	-1.7	-1.7	-2.0
Contribution from interest rate/growth differential	-2.8	-3.7	-3.8	-4.6			-4.3	-4.7	-5.4	-5.0	-4.4	-3.7	-4.6	-2.1	-1.7	-1.7	-2.0
<i>Of which: contribution from average real interest rate</i>	-0.8	-1.7	-1.6	-1.7			-1.5	-1.4	-1.4	-1.3	-1.3	-1.2	-1.3	-0.7	-0.5	-0.5	-0.6
<i>Of which: contribution from real GDP growth</i>	-2.0	-2.0	-2.2	-3.0			-2.8	-3.3	-4.0	-3.7	-3.1	-2.5	-3.2	-1.4	-1.2	-1.2	-1.4
Contribution from real exchange rate depreciation	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other identified debt-creating flows	-0.3	-0.2	0.0	0.0			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	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	0.0	0.0	0.0	0.0
Debt relief (HIPC and other)	-0.3	-0.2	0.0	0.0			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	0.0	0.0	0.0	0.0
Residual, including asset changes	7.7	2.5	-1.2	-0.7			0.9	0.7	0.7	0.6	0.6	-1.5	0.3	-1.0	-0.7	-0.7	-0.9
NPV of public sector debt	58.3	56.6	62.0	54.6			49.3	48.9	47.1	44.6	41.5	37.9	44.9	24.8	22.1	26.0	25.4
<i>Of which: foreign-currency denominated</i>	...	...	33.7	28.0			25.4	27.7	28.2	27.9	26.5	25.5	26.9	21.0	22.1	26.0	22.8
<i>Of which: external</i>	...	...	33.7	28.0			25.4	27.7	28.2	27.9	26.5	25.5	26.9	21.0	22.1	26.0	22.8
NPV of contingent liabilities (not included in public sector debt)	...	...	...	15.8			15.3	16.6	20.5	22.4	23.1	23.7	20.3	25.9	27.1	25.7	26.1
Gross financing need 2/	3.0	2.5	0.6	3.6			5.0	6.8	4.6	3.0	1.1	1.6	3.7	6.0	5.4	4.8	5.1
NPV of public sector debt-to-revenue ratio (in percent) 3/	...	...	167.2	156.0			140.6	155.9	155.6	152.7	148.8	135.7	148.2	99.2	96.4	120.0	105.7
<i>Of which: external</i>	...	...	90.8	80.0			72.3	88.2	93.3	95.6	95.0	91.3	89.3	84.2	96.4	120.0	95.9
Debt service-to-revenue ratio (in percent) 3/ 4/	3.2	2.8	3.6	4.8			6.0	6.2	6.1	5.8	6.4	5.7	6.1	10.5	7.2	6.6	8.2
Primary deficit that stabilizes the debt-to-GDP ratio	-4.7	1.5	5.0	5.3			3.3	4.0	4.8	4.5	3.9	5.2	4.3	3.1	2.4	2.4	2.9
Key macroeconomic and fiscal assumptions																	
Real GDP growth (in percent)	3.2	3.0	3.2	4.8	1.3	2.4	4.8	5.7	7.0	6.6	5.9	5.1	5.9	3.9	3.7	3.6	3.9
Average nominal interest rate on forex debt (in percent)	0.9	1.1	1.3	1.3	1.2	0.2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.7	1.9	2.1	1.8
Average real interest rate on domestic currency debt (in percent)	-1.6	-3.1	-3.2	-3.3	-1.8	1.0	-3.3	-3.3	-3.4	...	...	...	-3.3	...	...	...	...
Real exchange rate depreciation (in percent, + indicates depreciation)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Inflation rate (GDP deflator, in percent)	2.0	3.1	3.1	3.6	2.3	0.8	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Growth of real primary spending (deflated by GDP deflator, in percent)	14.4	6.4	1.1	6.3	1.1	9.3	7.7	0.9	-2.5	-1.4	-5.4	7.6	1.2	2.6	3.8	1.9	2.9

Sources: Country authorities; and Fund staff 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 including 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.

Appendix Table 16. Djibouti: Sensitivity Analysis for Key Indicators of Public Debt, 2007–27

	Projections								
	2007	2008	2009	2010	2011	2012	2017	2022	2027
NPV of debt-to-GDP ratio									
Baseline	49	49	47	45	42	38	25	22	26
A. Alternative scenarios									
A1. Real GDP growth and primary balance are at historical averages	49	47	46	45	44	42	29	24	24
A2. Primary balance is unchanged from 2007	49	48	46	45	44	42	32	30	33
A3. Permanently lower GDP growth 1/	49	49	47	45	42	39	27	27	34
A4. Recognition of contingent liabilities	49	50	49	47	45	42	32	31	37
B. Bound tests									
B1. Real GDP growth is at historical average minus one standard deviations in 2008–09	49	51	52	51	49	47	38	40	47
B2. Primary balance is at historical average minus one standard deviations in 2008–09	49	47	44	42	39	35	23	20	25
B3. Combination of B1-B2 using one half standard deviation shocks	49	50	51	48	45	40	24	19	23
B4. One-time 30 percent real depreciation in 2008	49	58	55	52	48	45	28	24	27
B5. 10 percent of GDP increase in other debt-creating flows in 2008	49	59	56	53	49	45	29	25	28
NPV of debt-to-revenue ratio 2/									
Baseline	141	156	156	153	149	136	99	96	120
A. Alternative scenarios									
A1. Real GDP growth and primary balance are at historical averages	141	151	151	151	155	146	112	101	109
A2. Primary balance is unchanged from 2007	141	152	152	153	157	150	129	132	153
A3. Permanently lower GDP growth 1/	141	156	156	154	151	139	109	117	154
A4. Recognition of contingent liabilities	141	159	162	162	162	152	129	137	172
B. Bound tests									
B1. Real GDP growth is at historical average minus one standard deviations in 2008–09	141	161	170	173	174	165	152	173	217
B2. Primary balance is at historical average minus one standard deviations in 2008–09	141	148	145	142	138	126	90	89	113
B3. Combination of B1-B2 using one half standard deviation shocks	141	158	166	162	157	141	93	84	105
B4. One-time 30 percent real depreciation in 2008	141	186	182	178	174	160	113	103	127
B5. 10 percent of GDP increase in other debt-creating flows in 2008	141	188	185	181	176	160	118	111	131
Debt service-to-revenue ratio 2/									
Baseline	6	6	6	6	6	6	11	7	7
A. Alternative scenarios									
A1. Real GDP growth and primary balance are at historical averages	6.0	6.4	6.2	6.1	6.9	6.4	12.7	8.6	7.1
A2. Primary balance is unchanged from 2007	6	6	6	6	6	6	11	9	8
A3. Permanently lower GDP growth 1/	6	6	6	6	7	6	11	8	8
A4. Recognition of contingent liabilities	6	6	6	6	7	6	11	9	9
B. Bound tests									
B1. Real GDP growth is at historical average minus one standard deviations in 2008–09	6	6	7	7	7	7	13	10	11
B2. Primary balance is at historical average minus one standard deviations in 2008–09	6	6	6	5	6	5	10	7	6
B3. Combination of B1-B2 using one half standard deviation shocks	6	7	7	6	7	6	11	7	6
B4. One-time 30 percent real depreciation in 2008	6	7	7	7	7	7	12	9	8
B5. 10 percent of GDP increase in other debt-creating flows in 2008	6	6	6	6	6	6	11	7	7
Debt service-to-GDP ratio									
Baseline	2	2	2	2	2	2	3	2	1
A. Alternative scenarios									
A1. Real GDP growth and primary balance are at historical averages	2	2	2	2	2	2	3	2	2
A2. Primary balance is unchanged from 2005	2	2	2	2	2	2	3	2	2
A3. Permanently lower GDP growth 1/	2	2	2	2	2	2	3	2	2
A4. Recognition of contingent liabilities	2	2	2	2	2	2	3	2	2
B. Bound tests									
B1. Real GDP growth is at historical average minus one standard deviations in 2007–08	2	2	2	2	2	1.9	3.2	2.4	2
B2. Primary balance is at historical average minus one standard deviations in 2007–08	2	2	2	2	2	2	3	2	1
B3. Combination of B1-B2 using one half standard deviation shocks	2	2	2	2	2	2	3	2	1
B4. One-time 30 percent real depreciation in 2007	2	2	2	2	2	2	3	2	2
B5. 10 percent of GDP increase in other debt-creating flows in 2007	2	2	2	2	2	2	3	2	1

Sources: Country authorities; and Fund staff estimates and projections.

1/ Assumes that real GDP growth is at baseline minus one standard deviation divided by the square root of 20 (i.e., the length of the projection period).

2/ Revenues are defined inclusive of grants.