INTERNATIONAL DEVELOPMENT ASSOCIATION AND
INTERNATIONAL MONETARY FUND

REPUBLIC OF LIBERIA

Joint World Bank/IMF Debt Sustainability Analysis

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The low-income country debt sustainability analysis (LIC DSA) reveals that Liberia is in debt distress, emphasizing the need for debt relief.[1] [2] *Under the alternative scenario which assumes full delivery of HIPC, MDRI and IMF beyond-HIPC*[3] *debt relief at completion point, debt dynamics remain manageable, assuming moderate new borrowing, largely on concessional terms, and robust GDP growth. While domestic debt is substantial, the inclusion of domestic debt in the analysis does not significantly change the overall assessment of Liberia's debt sustainability.*

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[1] These DSAs have been produced jointly by the World Bank and Fund staffs. Liberia's fiscal year runs from July 1-June 30.

[2] Liberia has not yet been rated under the World Bank's Country Policy and Institutional Assessment (CPIA). However, for the purposes of this analysis, the staff's have conservatively assumed a weak policy rating (without prejudicing any future CPIA assessment). Accordingly, the corresponding indicative thresholds for the external LIC DSA are 30 percent for the NPV of debt-to-GDP ratio, 100 percent for the NPV of debt-to-exports ratio, and 15 percent for the debt service-to-exports ratio. See "Operational Framework for Debt Sustainability Assessments in Low-Income Countries—Further Considerations" (http://www.imf.org/External/np/pp/eng/2005/032805.htm, 3/28/05) and "Applying the Debt Sustainability Framework for Low-Income Countries Post Debt Relief" (www.imf.org, 11/6/06). Assuming a more favorable CPIA rating of "medium" would not change the substance of the external LIC DSA analysis.

[3] Liberia's debt to the IMF under the 3-year PRGF/EFF will not be covered by MDRI since it will be contracted after the end-2004 MDRI cutoff date. "Beyond-HIPC" debt relief refers to the assistance necessary to reduce the value of the stock of qualifying debt to zero.

A. Introduction

1. **The external and public sector LIC DSAs presented below are based on the common standard LIC DSA framework[4], with some modifications to the stress tests to address data limitations in Liberia and the potential for domestic debt contingent liabilities to be realized.**[5] The DSAs present the projected path of Liberia's external and public sector debt burden indicators, and draw some conclusions on the forward-looking sustainability of debt. Methodologically, the LIC DSA differs from the HIPC Debt Relief Analysis (DRA) in that it compares the evolution over the projection period of debt-burden indicators (based on single-year denominators) against policy-dependent indicative thresholds. In contrast, under a HIPC DRA, the debt burden indicators (based on three-year backward-looking averages of denominators) are compared to uniform thresholds in order to evaluate eligibility or to calculate HIPC debt relief as of a historical reference date.[6]

B. Baseline Scenario

2. The baseline scenario relies on the same long-run macroeconomic framework as that underlying the HIPC DRA and is consistent with the program projections under the PRGF/EFF arrangements. Average annual real GDP growth is projected to moderate over the projection period, from 10.5 percent in 2007/08–2012/13 to the long-run average of 3¾ percent in 2013/14–2026/27. This pattern reflects the projected decrease in foreign direct investment (FDI)-to-GDP ratio from short- to medium-term exceptional levels above 30 percent, to a still significant, yet markedly lower, long-term level of about 7 percent.[7] While direct donor-financed reconstruction and investment is expected to remain an important factor supporting growth over the medium term, it is expected to decline gradually over the long term as a share of GDP. The ratios of key macroeconomic variables (for example, government revenues, current account deficit and FDI) to GDP may be overstated due to the

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[4] See "Debt Sustainability in Low-Income Countries: Proposal for an Operational Framework and Policy Implications" (http://www.imf.org/external/np/pdr/sustain/2004/020304.htm and IDA/SECM2004/0035, 2/3/04) and "Debt Sustainability in Low-Income Countries: Further Considerations on an Operational Framework, Policy Implications" (http://www.imf.org/external/np/pdr/sustain/2004/091004.htm, 9/10/04) and "Applying the Debt Sustainability Framework for Low-Income Countries Post Debt Relief" (www.imf.org, 11/6/06).

[5] On the historical averages for the stress tests, average GDP growth is calculated using data from 1961-1980 which excludes significant volatility during the last 25 years due to political instability; the historical averages for some of the other key variables are taken over different subsets of the last 10 years due to the poor quality of data. Also, as noted in "Liberia: Enhanced Initiative for Heavily Indebted Poor Countries – Preliminary Document", Annex II (Country Report No. 08/53), service exports for Liberia were estimated using data from comparator countries, as was done for the HIPC DRA.

[6] In addition, the results of the LIC DSA differ from the HIPC DRA because of two other methodological differences related to the definition of: (i) discount rates; and (ii) exchange rates.

[7] FDI-related imports are assumed to represent about 85 percent of FDI over the projection period.

probable underestimation of GDP owing to the absence of official national accounts data following the destruction of Liberia's statistical capacity during the civil war.

3. **Liberia is assumed to exercise continued fiscal discipline resulting in limited borrowing over the medium to long term.** It is assumed that the government will continue with the cash-based balanced budget until reaching completion point. The projection then assumes borrowing in 2010/11 to fund fiscal deficits (including grants) of 1.5 percent of GDP in the initial year, and 3 percent of GDP per year for the rest of the projection period. Two thirds of the deficit in each year is assumed to be financed by concessional external debt and the remainder by local currency domestic debt. Underlying this, revenues are assumed to increase gradually from 24 percent of GDP in 2007/08 to their long-term level of 27½ percent of GDP (28.6 percent of GDP, including grants) in 2012/13. Expenditures, excluding debt servicing due which is financed by HIPC assistance, are expected to peak at their long-run level of 31.6 percent of GDP in 2012/13.

4. **Under the assumption that FDI and donor flows continue to be robust over the medium term, the external position is projected to remain manageable**. Over the longer term, the current account deficit (excluding grants) is projected to decrease gradually as a percentage of GDP from about 69 percent in 2006/07 to around 23 percent in 2026/27. External grants and FDI are expected to remain the predominant form of financing, but decreasing as a percentage of GDP from 42 percent in 2006/07 to around 19 percent in 2026/27. As official transfers and FDI taper off as a percent of GDP, the current account deficit (including grants) is expected to decline gradually to just below 11 percent of GDP by the end of the projection period, matching the gradual fall in the trade deficit as a percentage of GDP as the impact of continuous FDI is fully reflected in export growth. Income growth and improved financial intermediation are expected to stimulate private sector savings and result in a narrowing of the private sector savings-investment deficit in the long term.

5. **The baseline scenario assumes full delivery of traditional debt relief, multilateral arrears clearance and interim HIPC assistance.**[8] In addition, a financing gap is assumed to be met through additional voluntary interim-period assistance beyond-HIPC Initiative relief, as detailed in the decision point document. Consistent with LIC DSA guidelines, the baseline does not reflect the delivery of HIPC, MDRI and IMF beyond-HIPC assistance at the completion point; however, this is presented in an alternative scenario.[9]

C. Debt Sustainability Analyses

[8] The stock of external debt at end- 2007/08 reflects large up-front borrowing from the IMF to clear arrears to the IMF, as well as other reschedulings, and fully grant-financed clearance of World Bank and African Development Bank arrears.

[9] See "Staff Guidance Note on the Application of the Joint Bank-Fund Debt Sustainability Framework for Low-Income Countries" (www.imf.org, 03/05/2007).

External Debt Sustainability

6. **The baseline scenario, which assumes full delivery of traditional debt relief and a financing gap to be met, in part, through HIPC interim assistance, indicates that Liberia is in debt distress (Table 1a, Figure 1)**. The NPV of external debt-to-GDP ratio remains well above the threshold (30 percent), while the NPV of external debt-to-exports ratio moves below the 100 percent threshold by 2016/17, reflecting the cumulative effect of FDI on exports. The debt service ratios (to export and revenue) become manageable after 2018/19 reflecting the high degree of concessionality of the outstanding stock of debt owed to multilateral (mainly on IDA or IDA-like terms) and bilateral creditors. However, Liberia's debt service ratios are above their respective thresholds (15 percent for exports and 25 percent for revenues) during 2011/12 to 2017/18, due mainly to payments associated with the PRGF/EFF arrangements.

7. **The alternative scenarios and bound tests indicate that the evolution of Liberia's external debt position is subject to considerable vulnerabilities and highlight the importance of debt relief (Table 1b, Figure 1)**. In particular, most debt indicators deteriorate significantly under the bound tests (temporary shocks). Nevertheless, since Liberia's new borrowing is assumed to be moderate and largely on highly concessional terms, a permanent (unfavorable) shock to the terms of new borrowing will not result in a drastic deterioration of debt indicators. However, given Liberia's development needs, any deterioration in the debt ratios will make meeting its spending priorities substantially more difficult.

8. **Debt relief through HIPC Initiative, MDRI and IMF beyond-HIPC assistance and possible bilateral and multilateral beyond-HIPC interim-period assistance, would significantly improve Liberia's debt situation**. Assuming the full delivery of such assistance at completion point, all three debt-burden indicators (NPV of debt-to-GDP ratio, NPV of debt-to-exports ratio, and debt service-to-exports ratio) would be significantly below their indicative thresholds.

Public Sector Debt Sustainability

9. **Under the baseline scenario, Liberia's public debt (including domestic debt) is expected to decline steadily as a percentage of GDP throughout the projection period (Table 2a, Figure 2).** In the first few years of the projection, the steady fall in the debt-to-GDP ratio is largely driven by strong GDP growth and assumed moderate borrowing. In the outer years, borrowing remains moderate and GDP growth of 3¾ percent is robust enough to continue contributing to the decline in the ratio.

10. **Domestic debt does not play a significant role in public debt dynamics.** While the stock of domestic debt at the beginning of the projection period is substantial at around 40 percent of GDP, it has been restructured on concessional terms consistent with the

government's domestic debt strategy, and new domestic borrowing, assumed to commence after the completion point, averages 1 percent of GDP.[10]

11. **The various stress tests indicate that Liberia's public debt dynamic is most vulnerable to GDP shocks (Table 2b, Figure 2).** Although the one-time 30 percent depreciation shock in 2008/09 (bound test B4) has a large adverse impact on debt dynamics, it should be interpreted cautiously, given that currently about 95 percent of government revenues are collected in U.S. dollars.[11] The DSA also shows that the inclusion of part of domestic claims which are currently classified as "contestable" following the government's vetting of domestic debt claims (bound test B5) would increase the debt stock in 2008/09, but not affect debt ratios significantly over the long term.[12]

D. Debt Distress Classification and Conclusion

12. **The low-income country debt sustainability analysis reveals that Liberia is in debt distress.** Under the baseline scenario, external debt burden indicators remain well above their indicative thresholds. This emphasizes the need for debt relief. Debt relief under the HIPC Initiative, MDRI and beyond-HIPC assistance significantly improve Liberia's external debt situation and bring Liberia's debt indicators to a manageable level.

13. **Alternative scenarios and bound tests indicate that the evolution of Liberia's external debt position is subject to vulnerabilities.** The achievement of a robust external debt position will depend on real GDP growth, export and revenue performance as well as prudent debt management. The inclusion of domestic debt in the analysis does not significantly change the overall assessment of Liberia's debt sustainability.

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[10] Debt owed to the Central Bank of Liberia represents over 90 percent of the total domestic debt at end-June 2007 and was rescheduled on concessional terms with a 30 year maturity, 10 year grace period on principal, and interest rates increasing from 1.0 percent at the start of the repayment period to 2.5 percent for the latter part of the period.

[11] If Liberia were to start collecting a greater portion of revenues in Liberian dollars, resulting in a greater mismatch on the government's balance sheet, the implications of this scenario would become more important.

[12] The outcome of the further vetting of approximately $0.3 billion of "contestable" domestic claims is uncertain due to the need to establish the validity of claims and the discount factor, as well as potential legal action on the part of claimants. Without prejudging the results of the vetting exercise, the scenario assumes that the discounted value of claims will be 10 percent of GDP (approximately $80 million).

Table 1a. Country: External Debt Sustainability Framework, Baseline Scenario, 2007/08-26/27 1/
(In percent of GDP, unless otherwise indicated)

	Actual	Historical Average 6/	Standard Deviation 6/	Projections									
	2006/07			2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2007/08-12/13 Average	2013/14 10/	2026/27	2013/14-26/27 Average
External debt (nominal) 1/	**709.3**			**313.1**	**280.9**	**244.3**	**209.1**	**181.3**	**161.6**		**145.2**	**56.3**	
o/w public and publicly guaranteed (PPG)	709.3			313.1	280.9	244.3	209.1	181.3	161.6		145.2	56.3	
Change in external debt	-135.0			-396.2	-32.2	-36.6	-35.2	-27.8	-19.7		-16.4	-2.7	
Identified net debt-creating flows	-102.0			-40.6	-9.3	-16.0	-21.2	-16.1	-4.4		3.0	1.3	
Non-interest current account deficit	**5.5**	**-0.2**	**10.4**	**50.9**	**58.5**	**46.6**	**29.5**	**22.0**	**17.9**		**14.6**	**9.3**	12.2
Deficit in balance of goods and services	43.3			66.7	77.3	57.9	36.3	27.2	22.7		20.7	13.5	
Exports	27.5			49.9	66.1	86.8	104.9	113.4	109.4		95.4	76.0	
Imports	70.8			116.6	143.4	144.7	141.2	140.6	132.1		116.2	89.5	
Net current transfers (negative = inflow)	-41.8	-21.5	15.0	-38.0	-33.2	-28.2	-24.9	-22.5	-21.3		-20.7	-14.3	-17.3
o/w official	-35.5			-30.1	-26.0	-21.9	-19.5	-17.8	-16.9		-16.5	-11.8	
Other current account flows (negative = net inflow)	4.1			22.2	14.4	16.9	18.2	17.3	16.4		14.6	10.0	
Net FDI (negative = inflow)	**-0.7**	**-0.2**	**0.2**	**-33.3**	**-46.3**	**-37.3**	**-28.9**	**-24.9**	**-17.2**		**-11.1**	**-7.3**	-8.7
Endogenous debt dynamics 2/	**-106.8**			**-58.2**	**-21.5**	**-25.3**	**-21.9**	**-13.2**	**-5.1**		**-0.5**	**-0.7**	
Contribution from nominal interest rate	21.3			0.3	6.4	5.6	6.1	6.6	6.0		5.4	1.5	
Contribution from real GDP growth	-62.0			-58.5	-27.9	-30.9	-28.0	-19.8	-11.0		-5.8	-2.1	
Contribution from price and exchange rate changes	-66.2			…	…	…	…	…	…		…	…	
Residual (3-4) 3/	**-33.0**			**-355.6**	**-22.9**	**-20.6**	**-14.0**	**-11.8**	**-15.2**		**-19.4**	**-4.0**	
o/w exceptional financing	-26.1			-350.3	-19.2	-14.4	-11.2	-10.6	-15.2		-18.2	-3.8	
NPV of external debt 4/	689.4			254.5	233.0	206.9	179.1	156.0	138.5		123.3	41.3	
In percent of exports	2502.7			510.3	352.5	238.4	170.8	137.5	126.6		129.3	54.3	
NPV of PPG external debt	**689.4**			**254.5**	**233.0**	**206.9**	**179.1**	**156.0**	**138.5**		**123.3**	**41.3**	
In percent of exports	**2502.7**			**510.3**	**352.5**	**238.4**	**170.8**	**137.5**	**126.6**		**129.3**	**54.3**	
Debt service-to-exports ratio (in percent)	**80.0**			**4.5**	**11.6**	**7.3**	**6.6**	**6.5**	**11.6**		**17.0**	**4.0**	
PPG debt service-to-exports ratio (in percent)	**80.0**			**4.5**	**11.6**	**7.3**	**6.6**	**6.5**	**11.6**		**17.0**	**4.0**	
Total gross financing need (billions of U.S. dollars)	0.2			0.2	0.2	0.2	0.1	0.1	0.2		0.3	0.2	
Non-interest current account deficit that stabilizes debt ratio	140.5			447.1	90.7	83.2	64.7	49.8	37.5		31.0	12.0	
Key macroeconomic assumptions													
Real GDP growth (in percent)	8.7	3.0	3.4	9.5	10.0	12.7	13.5	10.9	6.6	10.5	3.8	3.8	3.8
GDP deflator in US dollar terms (change in percent)	8.5	4.0	6.2	5.4	1.8	2.3	3.6	4.0	2.1	3.2	1.0	1.6	1.5
Effective interest rate (percent) 5/	3.0	3.0	1.0	0.0	2.3	2.3	2.9	3.7	3.6	2.5	3.5	2.6	3.1
Growth of exports of G&S (US dollar terms, in percent)	25.2	18.6	32.7	108.9	48.3	51.3	42.1	24.8	5.1	46.7	-8.6	3.9	2.7
Growth of imports of G&S (US dollar terms, in percent)	31.3	17.1	16.1	89.9	37.7	16.3	14.7	14.9	2.3	29.3	-7.8	3.5	2.5
Grant element of new public sector borrowing (in percent) 7/	...	...	...	25.9	25.9	25.9	40.4	56.9	56.9	38.6	56.9	56.9	56.9
Aid flows (in billions of US dollars) 8/	0.3			0.3	0.3	0.3	0.3	0.4	0.5		0.6	0.6	
Grant-equivalent financing (in percent of GDP) 9/	...			0.0	1.8	1.5	2.0	1.7	2.2		2.3	2.3	2.3
Grant-equivalent financing (in percent of external financing) 9/	...			...	49.6	60.5	61.5	81.8	73.8		73.4	73.5	73.5
Memorandum items:													
Nominal GDP (billions of US dollars)	0.7			0.8	0.9	1.0	1.2	1.4	1.5		1.5	3.1	
(NPVt-NPVt-1)/GDPt-1 (in percent)				-395.7	**6.1**	**5.5**	3.7	0.9	-5.1	-64.1	-9.2	-0.2	-3.4

Source: Staff simulations.

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 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 10 years, subject to data availability.
7/ The grant element in the first three years of the projection period is lower relative to the rest of the period due to disbursements under the PRGF.
8/ Defined as grants, concessional loans, and debt relief.
9/ Grant-equivalent financing includes grants provided directly to the government and through new borrowing (difference between the face value and the NPV of new debt).
10/ Declines in export and imports are due to a projected fall in iron ore prices and a decline in mineral sector FDI-related imports, respectively.

Table 1b. Country: Sensitivity Analyses for Key Indicators of Public and Publicly Guaranteed External Debt, 2007/08-26/27
(In percent)

		Projections																		
	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	**2017/18**	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
NPV of debt-to-GDP ratio																				
Baseline	255	233	207	179	156	139	123	108	93	80	**67**	63	60	57	54	51	49	46	44	41
A. Alternative Scenarios																				
A1. Key variables at their historical averages in 2008/09-26/27 1/	255	237	222	211	200	181	159	137	117	99	**81**	75	69	64	60	56	52	48	45	42
A2. New public sector loans on less favorable terms in 2008/09-26/27 2/	255	233	207	180	157	140	125	110	96	83	**71**	67	64	62	59	57	55	52	50	48
A3. Full delivery of HIPC Initiative, MDRI and beyond-HIPC assistance	255	233	207	10	8	8	8	8	9	9	**9**	9	10	10	10	11	11	11	12	12
B. Bound Tests																				
B1. Real GDP growth at historical average minus one standard deviation in 2008/09-09/10	255	257	258	224	195	173	154	135	116	99	**84**	79	75	71	67	64	61	58	55	52
B2. Export value growth at historical average minus one standard deviation in 2008/09-09/10 3/	255	246	245	213	187	168	152	137	122	108	**95**	89	84	79	75	71	67	63	59	55
B3. US dollar GDP deflator at historical average minus one standard deviation in 2008/09-09/10	255	240	220	190	166	147	131	115	99	85	**71**	67	64	61	57	54	52	49	46	44
B4. Net non-debt creating flows at historical average minus one standard deviation in 2008/09-09/10 4/	255	265	261	227	199	180	164	149	133	119	**105**	99	93	88	83	78	74	69	65	61
B5. Combination of B1-B4 using one-half standard deviation shocks	255	271	302	262	230	207	188	170	151	134	**118**	111	105	99	93	88	83	78	74	69
B6. One-time 30 percent nominal depreciation relative to the baseline in 2008/09 5/	255	330	293	254	221	196	175	153	132	113	**95**	90	85	81	77	73	69	65	62	59
NPV of debt-to-exports ratio																				
Baseline	510	352	238	171	138	127	129	125	110	96	**83**	80	77	74	70	67	63	60	57	54
A. Alternative Scenarios																				
A1. Key variables at their historical averages in 2008/09-26/27 1/	510	359	256	201	176	166	166	159	139	119	**100**	94	89	83	78	73	67	63	59	56
A2. New public sector loans on less favorable terms in 2008/09-26/27 2/	510	353	239	171	138	128	131	128	114	100	**87**	85	83	80	77	74	71	68	65	64
A3. Full delivery of HIPC Initiative, MDRI and beyond-HIPC assistance	510	352	238	9	7	7	9	10	10	11	**11**	12	13	13	14	14	14	15	15	16
B. Bound Tests																				
B1. Real GDP growth at historical average minus one standard deviation in 2008/09-09/10	510	352	238	171	138	127	129	125	110	96	**83**	80	77	74	70	67	63	60	57	54
B2. Export value growth at historical average minus one standard deviation in 2008/09-09/10 3/	510	642	859	618	500	467	486	483	439	396	**355**	341	327	313	297	280	264	247	233	222
B3. US dollar GDP deflator at historical average minus one standard deviation in 2008/09-09/10	510	352	238	171	138	127	129	125	110	96	**83**	80	77	74	70	67	63	60	57	54
B4. Net non-debt creating flows at historical average minus one standard deviation in 2008/09-09/10 4/	510	400	300	216	175	164	172	172	158	144	**130**	124	119	114	108	102	96	90	84	80
B5. Combination of B1-B4 using one-half standard deviation shocks	510	549	618	444	360	336	351	350	318	289	**259**	248	239	228	216	204	192	180	170	161
B6. One-time 30 percent nominal depreciation relative to the baseline in 2008/09 5/	510	352	238	171	138	127	129	125	110	96	**83**	80	77	74	70	67	63	60	57	54
NPV of debt-to-revenue ratio																				
Baseline	1018	905	761	646	561	500	447	391	338	288	**243**	229	217	206	196	186	176	167	158	150
A. Alternative Scenarios																				
A1. Key variables at their historical averages in 2008/09-26/27 1/	1018	922	817	761	718	654	574	497	424	357	**295**	270	250	233	217	202	188	175	163	153
A2. New public sector loans on less favorable terms in 2008/09-26/27 2/	1018	906	762	649	564	504	453	399	347	300	**256**	244	234	224	215	206	198	190	182	175
A3. Full delivery of HIPC Initiative, MDRI and beyond-HIPC assistance	1018	905	761	34	30	29	30	31	31	32	**33**	34	35	37	38	39	40	41	42	43
B. Bound Tests																				
B1. Real GDP growth at historical average minus one standard deviation in 2008/09-09/10	1018	999	950	807	701	624	557	489	422	360	**303**	286	271	257	244	232	220	208	197	187
B2. Export value growth at historical average minus one standard deviation in 2008/09-09/10 3/	1018	954	901	769	671	605	552	496	441	391	**343**	323	304	287	271	256	241	227	214	201
B3. US dollar GDP deflator at historical average minus one standard deviation in 2008/09-09/10	1018	930	808	687	596	531	474	416	359	306	**258**	244	231	219	208	197	187	177	168	159
B4. Net non-debt creating flows at historical average minus one standard deviation in 2008/09-09/10 4/	1018	1027	958	818	716	648	594	538	483	432	**381**	359	338	319	300	283	266	251	235	221
B5. Combination of B1-B4 using one-half standard deviation shocks	1018	1052	1109	947	827	747	682	614	548	487	**428**	403	380	359	339	319	301	283	266	250
B6. One-time 30 percent nominal depreciation relative to the baseline in 2008/09 5/	1018	1283	1079	917	796	709	633	555	479	409	**345**	325	308	292	277	263	250	237	224	212

Table 1b (cont.). Country: Sensitivity Analyses for Key Indicators of Public and Publicly Guaranteed External Debt, 2007/08-26/27

(In percent)

		Projections																		
	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	**2017/18**	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
Debt service-to-exports ratio																				
Baseline	5	12	7	7	7	12	17	18	18	17	**16**	5	5	5	5	4	4	4	4	4
A. Alternative Scenarios																				
A1. Key variables at their historical averages in 2008/09-26/27 1/	5	12	8	8	8	15	21	22	22	20	**18**	6	5	5	5	5	4	4	4	4
A2. New public sector loans on less favorable terms in 2008/09-26/27 2/	5	12	7	7	7	12	17	18	18	17	**16**	6	5	5	5	5	5	5	5	5
A3. Full delivery of HIPC Initiative, MDRI and beyond-HIPC assistance	5	12	7	2	1	1	1	1	1	1	**1**	1	1	1	1	1	1	1	1	1
B. Bound Tests																				
B1. Real GDP growth at historical average minus one standard deviation in 2008/09-09/10	5	12	7	7	7	12	17	18	18	17	**16**	5	5	5	5	4	4	4	4	4
B2. Export value growth at historical average minus one standard deviation in 2008/09-09/10 3/	5	20	23	22	21	36	53	57	56	53	**52**	24	22	21	20	19	19	18	17	17
B3. US dollar GDP deflator at historical average minus one standard deviation in 2008/09-09/10	5	12	7	7	7	12	17	18	18	17	**16**	5	5	5	5	4	4	4	4	4
B4. Net non-debt creating flows at historical average minus one standard deviation in 2008/09-09/10 4/	5	12	8	7	7	12	18	19	19	18	**18**	9	8	8	7	7	7	7	6	6
B5. Combination of B1-B4 using one-half standard deviation shocks	5	17	16	15	15	26	37	40	40	38	**37**	17	16	16	15	14	14	13	12	12
B6. One-time 30 percent nominal depreciation relative to the baseline in 2008/09 5/	5	12	7	7	7	12	17	18	18	17	**16**	5	5	5	5	4	4	4	4	4
Debt service-to-revenue ratio																				
Baseline	9	30	23	25	27	46	59	57	55	51	**47**	16	14	13	13	12	12	11	11	11
A. Alternative Scenarios																				
A1. Key variables at their historical averages in 2008/09-26/27 1/	9	31	26	30	34	59	74	69	66	60	**53**	17	15	14	14	13	12	12	11	11
A2. New public sector loans on less favorable terms in 2008/09-26/27 2/	9	30	24	25	27	46	59	57	55	51	**48**	16	15	15	14	14	13	13	13	13
A3. Full delivery of HIPC Initiative, MDRI and beyond-HIPC assistance	9	30	23	8	3	2	2	2	2	2	**2**	2	2	2	2	2	2	2	2	2
B. Bound Tests																				
B1. Real GDP growth at historical average minus one standard deviation in 2008/09-09/10	9	33	29	31	33	57	73	71	69	64	**59**	20	18	17	16	15	15	14	14	14
B2. Export value growth at historical average minus one standard deviation in 2008/09-09/10 3/	9	30	24	27	28	47	60	58	57	52	**50**	22	21	19	19	18	17	16	16	15
B3. US dollar GDP deflator at historical average minus one standard deviation in 2008/09-09/10	9	31	25	27	28	48	62	60	59	54	**50**	17	15	14	14	13	13	12	12	12
B4. Net non-debt creating flows at historical average minus one standard deviation in 2008/09-09/10 4/	9	30	25	28	29	48	61	59	57	53	**53**	25	23	22	21	20	19	18	17	17
B5. Combination of B1-B4 using one-half standard deviation shocks	9	32	29	33	34	57	73	70	69	63	**62**	28	26	24	23	22	21	20	20	19
B6. One-time 30 percent nominal depreciation relative to the baseline in 2008/09 5/	9	42	33	35	38	65	83	81	78	73	**67**	22	20	19	18	17	17	16	16	16
Memorandum item:																				
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	54	54	54	54	54	54	54	54	54	54	**54**	54	54	54	54	54	54	54	54	54

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
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. Liberia: Public Sector Debt Sustainability Framework, Baseline Scenario, 2007/08-2026/27
(In percent of GDP, unless otherwise indicated)

	Actual			Estimate	Projections								
	2006/07	Historical Average 7/	Standard Deviation 7/	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2007/08-12/13 Average	2017/18	2026/27	2013/14-26/27 Average
Public sector debt 1/	774.2			361.3	322.6	280.1	241.0	209.7	188.6		108.2	72.4	
o/w foreign-currency denominated	766.3			354.8	318.1	276.6	236.6	205.1	183.4		100.0	61.8	
Change in public sector debt	…			-412.9	-38.7	-42.5	-39.1	-31.3	-21.2		-14.4	-3.5	
Identified debt-creating flows	…			-113.3	-39.6	-43.4	-42.7	-38.1	-26.2		-15.1	-5.7	
Primary deficit	…	-1.3	1.5	-0.3	-2.5	-1.9	0.7	-4.0	-3.4	-1.9	-0.6	0.8	-0.3
Revenue and grants	…			24.0	25.6	27.3	28.1	28.4	28.6		28.6	28.7	
of which : grants	…			0.0	1.2	1.2	1.2	1.2	1.2		1.2	1.2	
Primary (noninterest) expenditure	…			23.6	23.1	25.3	28.7	24.5	25.3		28.0	29.5	
Automatic debt dynamics	…			-103.2	-31.6	-36.6	-35.2	-25.1	-10.7		-2.7	-2.0	
Contribution from interest rate/growth differential	…			-81.4	-31.6	-35.5	-31.1	-20.6	-10.2		-3.2	-2.2	
of which : contribution from average real interest rate	…			-14.2	1.2	0.7	2.1	3.2	2.8		1.3	0.6	
of which : contribution from real GDP growth	…			-67.2	-32.7	-36.3	-33.2	-23.8	-13.0		-4.5	-2.8	
Contribution from real exchange rate depreciation	…			-21.8	0.0	-1.1	-4.1	-4.5	-0.5		...	...	
Other identified debt-creating flows	…			-9.8	-5.5	-4.8	-8.1	-9.0	-12.1		-11.8	-4.5	
Privatization receipts (negative)	…			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	
Debt relief (HIPC and other)	…			-9.8	-5.5	-4.8	-8.1	-9.0	-12.1		-11.8	-4.5	
Other (specify, e.g. bank recapitalization)	…			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Residual, including asset changes	…			-299.6	0.9	0.9	3.6	6.8	5.0		0.7	2.2	
NPV of public sector debt	753.8			301.3	273.4	241.7	210.3	183.8	164.9		89.6	57.0	
o/w foreign-currency denominated	745.9			294.7	269.0	238.3	205.9	179.2	159.7		81.3	46.4	
o/w external	706.7			260.8	238.7	212.0	183.6	159.8	141.9		68.8	42.3	
NPV of contingent liabilities (not included in public sector debt)	...			...	...	...	...	...	...		...	...	
Gross financing need 2/	…			2.7	0.0	0.3	2.3	5.3	12.0		19.0	14.4	
NPV of public sector debt-to-revenue ratio (in percent) 3/	…			1257.7	1070.1	885.7	749.5	646.3	575.7		312.7	198.6	
o/w external	…			1088.8	934.1	776.7	654.2	561.9	495.5		240.1	147.3	
Debt service-to-revenue ratio (in percent) 3/ 4/	…			12.7	32.7	27.0	25.9	27.3	45.6		47.9	14.6	
Primary deficit that stabilizes the debt-to-GDP ratio	…			412.6	36.2	40.6	39.7	27.3	17.8		13.8	4.3	
Key macroeconomic and fiscal assumptions													
Real GDP growth (in percent)	8.7	3.0	3.4	9.5	10.0	12.7	13.5	10.9	6.6	10.5	3.8	3.8	3.8
Average nominal interest rate on forex debt (in percent)	0.0	0.2	0.3	0.1	2.3	2.3	2.9	3.5	3.4	2.4	3.0	2.6	2.9
Average real interest rate on domestic currency debt (in percent) 5/	...	…	…	-10.7	-8.3	-7.6	-7.3	-4.9	-1.1	-6.7	1.4	1.8	1.5
Real exchange rate depreciation (in percent, + indicates depreciation)	-3.6	0.5	8.0	-3.2	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	12.2	7.6	8.8	12.7	9.8	9.0	9.3	8.6	5.6	9.2	4.5	4.7	4.5
Growth of real primary spending (deflated by GDP deflator, in percent)	52.6	5.1	34.2	45.5	7.4	23.9	28.6	-5.5	10.2	18.3	5.5	4.5	4.9
Grant element of new external borrowing (in percent) 6/	0.0	0.0	0.0	25.9	25.9	25.9	40.4	56.9	56.9	38.6	56.9	56.9	...

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

1/ Data covers central government debt. Domestic debt data was reconciled in 2006/07 and no historical stock data is available prior to this date.

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 budget support grants.

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

5/ Negative real interest rates in the early part of the projection period are due to the highly concessional domestic currency debt stock at end-2006/07 following restructuring. New borrowing is assumed to begin after completion point.

6/ The grant element in the first three years of the projection period is lower relative to the rest of the period due to disbursements under the PRGF.

7/ Historical averages and standard deviations are generally derived over the past 10 years, subject to data availability and adjusted for outliers. Real GDP growth historical average and standard deviation uses data from 1961-1980.

Table 2b. Liberia: Sensitivity Analysis for Key Indicators of Public Debt 2007/08-26/27

(In percent)

		Projections																		
	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
NPV of Debt-to-GDP Ratio																				
Baseline	301	273	242	210	184	165	149	133	117	103	90	85	81	77	73	70	66	63	60	57
A. Alternative scenarios																				
A1. Real GDP growth and primary balance are at historical averages in 2008/09-26/27	301	291	280	265	252	237	217	198	178	159	140	133	127	121	115	109	103	97	91	85
A2. Full delivery of HIPC Initiative, MDRI and beyond-HIPC assistance	301	273	242	36	32	31	31	31	31	31	30	30	29	29	29	28	28	28	27	27
A3. Permanently lower GDP growth 1/	301	274	243	213	188	171	157	143	129	117	105	102	100	99	97	96	95	95	94	93
B. Bound tests																				
B1. Real GDP growth is at historical average minus one standard deviations in 2008/09-09/10	301	300	302	267	239	221	206	192	178	166	154	153	152	151	151	151	151	151	150	150
B2. Primary balance is at historical average minus one standard deviations in 2008/09-09/10	301	275	244	211	185	167	151	136	121	108	94	90	86	82	79	76	72	69	66	63
B3. Combination of B1-B2 using one half standard deviation shocks	301	296	289	251	220	199	180	163	145	129	112	107	102	98	93	89	85	81	77	73
B4. One-time 30 percent real depreciation in 2008/09	301	406	361	314	278	254	237	219	202	186	169	162	155	148	142	137	131	126	120	115
B5. 10 percent of GDP increase in domestic debt due to contingent liability in 2008/09 3/	301	282	248	215	188	169	153	138	123	109	95	91	86	83	79	76	72	69	66	63
NPV of Debt-to-Revenue Ratio 2/																				
Baseline	1258	1070	886	750	646	576	519	464	410	361	313	296	282	268	256	244	232	221	210	199
A. Alternative scenarios																				
A1. Real GDP growth and primary balance are at historical averages in 2008/09-26/27	1258	1134	1018	932	874	814	746	679	611	546	480	457	435	414	393	373	353	333	312	289
A2. Full delivery of HIPC Initiative, MDRI and beyond-HIPC assistance	1258	1070	886	130	114	109	107	107	107	108	105	103	102	101	100	99	98	97	95	94
A3. Permanently lower GDP growth 1/	1258	1073	891	758	661	597	547	498	451	407	365	356	349	343	338	334	331	329	326	324
B. Bound tests																				
B1. Real GDP growth is at historical average minus one standard deviations in 2008/09-09/10	1258	1170	1095	942	833	764	713	664	617	574	532	527	525	523	522	522	521	521	520	518
B2. Primary balance is at historical average minus one standard deviations in 2008/09-09/10	1258	1074	893	753	652	583	528	476	424	376	329	314	300	287	275	264	253	242	231	220
B3. Combination of B1-B2 using one half standard deviation shocks	1258	1153	1052	887	769	689	625	563	502	445	389	371	354	338	323	309	295	282	268	254
B4. One-time 30 percent real depreciation in 2008/09	1258	1589	1321	1120	976	888	827	766	705	648	591	565	541	518	497	477	457	438	419	400
B5. 10 percent of GDP increase in domestic debt due to contingent liability in 2008/09 3/	1258	1105	910	766	662	591	535	481	428	380	332	316	302	288	276	264	252	242	230	219
Debt Service-to-Revenue Ratio 2/																				
Baseline	13	33	27	26	27	46	58	59	55	51	48	20	18	17	17	16	16	15	15	15
A. Alternative scenarios																				
A1. Real GDP growth and primary balance are at historical averages in 2008/09-26/27	13	35	33	35	39	65	83	84	81	76	72	33	31	30	29	28	27	27	26	25
A2. Full delivery of HIPC Initiative, MDRI and beyond-HIPC assistance	13	33	27	9	4	4	4	6	4	4	4	6	6	6	6	6	6	6	6	6
A3. Permanently lower GDP growth 1/	13	33	28	28	30	48	62	63	60	57	54	25	24	23	23	23	23	23	23	23
B. Bound tests																				
B1. Real GDP growth is at historical average minus one standard deviations in 2008/09-09/10	13	36	35	35	37	59	75	76	73	69	67	34	33	33	33	34	34	35	35	36
B2. Primary balance is at historical average minus one standard deviations in 2008/09-09/10	13	33	29	28	30	47	60	60	57	54	51	23	22	20	20	19	19	18	18	17
B3. Combination of B1-B2 using one half standard deviation shocks	13	35	34	33	35	56	71	71	67	63	60	27	25	24	23	23	22	21	21	20
B4. One-time 30 percent real depreciation in 2008/09	13	39	39	39	42	58	70	69	66	61	58	30	29	28	27	27	26	25	25	24
B5. 10 percent of GDP increase in domestic debt due to contingent liability in 2008/09 3/	13	33	28	27	29	47	59	60	57	53	50	22	21	20	19	19	18	18	17	17

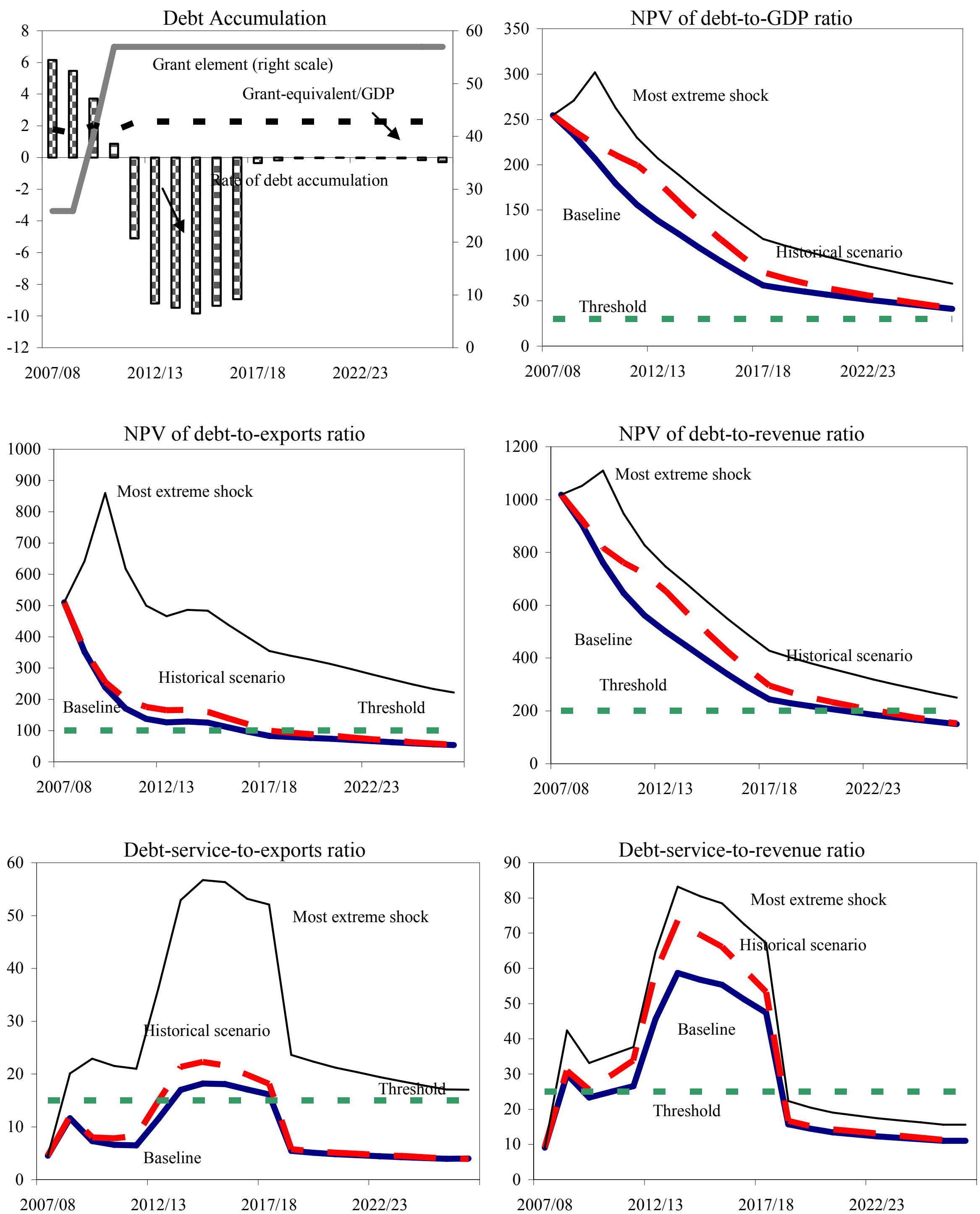
Sources: Country authorities; and Fund staff estimates and projections.

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 budget support grants.

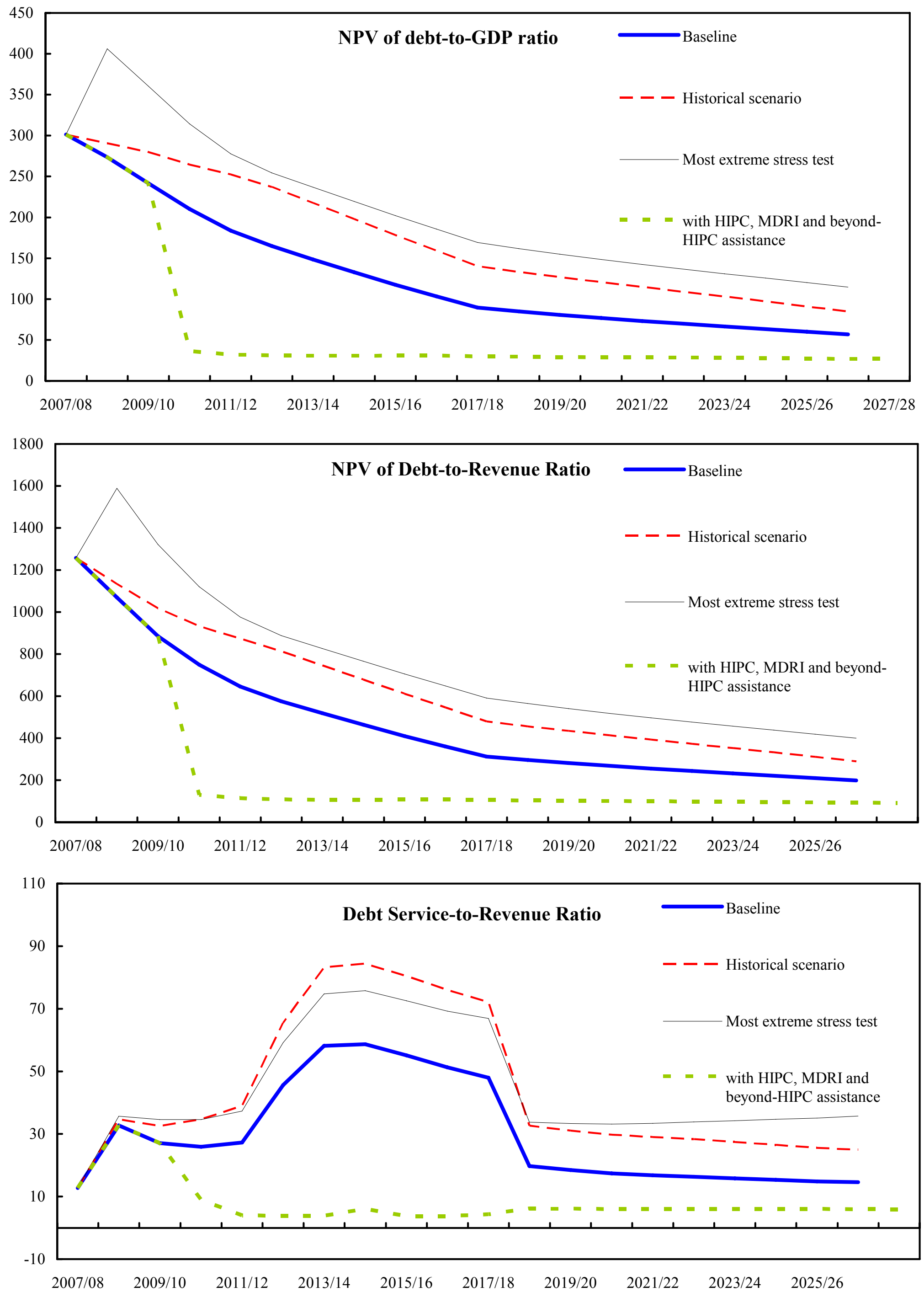
3/ The risks associated with this scenario should be interpreted with caution given that approximately 95 percent of government revenues are currently being collected in U.S. dollars.

Figure 1. Country: Indicators of Public and Publicly Guaranteed External Debt Under Alternative Scenarios, 2007/08-26/27



Source: Staff projections and simulations.

Figure 2. Liberia: Indicators of Public Debt Under Alternative Scenarios, 2007/08-26/27



Source: Staff projections and simulations.

Table. Liberia: Possible Delivery of IMF Enhanced HIPC Initiative Assistance and Beyond-HIPC Debt Relief, FY 2008-2021 1/
(In millions of U.S. dollars, unless otherwise indicated)

Fiscal Years (July-June)	2008	2009	2010	2011		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Based on SDR/US$ exchange rates of March 13, 2008	Mar-Jun			Jul-Dec	Jan-Jun										
I. Debt relief (under the HIPC Initiative only) 2/															
Delivery schedule of IMF assistance (in percent of the total assistance)	0.9	3.6	3.6	1.8	2.1	4.7	12.2	18.4	15.4	12.7	10.9	13.9	-	-	-
Projected debt Service due on IMF obligations 3/	6.5	25.8	25.9	13.0	16.2	35.6	127.2	191.2	189.0	185.7	181.6	175.4	9.3	5.1	2.2
Principal	-	-	-	-	-	-	93.6	162.7	166.8	169.7	171.9	171.9	9.3	5.1	2.2
EFF (265 percent of quota)	-	-	-	-	-	-	93.6	93.6	93.6	93.6	93.6	93.6	-	-	-
PRGF (185 percent of quota)	-	-	-	-	-	-	-	69.1	73.2	76.1	78.3	78.3	9.3	5.1	2.2
Interest and charges	6.5	25.8	25.9	13.0	16.2	35.6	33.6	28.6	22.2	16.0	9.7	3.4	0.1	0.0	0.0
EFF 4/	6.0	24.0	24.0	12.0	15.2	33.6	31.6	26.8	20.8	14.9	9.0	3.2	-	-	-
PRGF	0.5	1.7	1.8	0.9	1.0	2.0	2.0	1.8	1.4	1.0	0.7	0.3	0.1	0.0	0.0
Total HIPC-eligible debt	6.5	25.7	25.7	12.9	16.0	35.3	126.9	189.8	183.5	177.3	171.1	164.8	-	-	-
Principal	-	-	-	-	-	-	93.6	161.5	161.5	161.5	161.5	161.5	-	-	-
Interest and charges	6.5	25.7	25.7	12.9	16.0	35.3	33.3	28.3	22.0	15.8	9.5	3.3	-	-	-
IMF assistance--deposits into Liberia's Umbrella Account															
Interim assistance	24.6	25.1	19.3												
Completion point assistance 5/				631.2											
Completion point interest				80.5											
IMF assistance--drawdown schedule from Liberia's Umbrella Account	6.2	25.0	25.1	12.6	16.0	35.3	95.3	161.5	161.5	161.5	110.2	123.6	-	-	-
IMF assistance without interest	6.2	25.0	25.1	12.6	14.9	32.8	85.2	128.6	107.6	88.7	76.1	97.5	-	-	-
Estimated interest earnings 6/	-	-	-	-	1.2	2.5	10.1	32.9	54.0	72.8	34.2	26.1	-	-	-
Debt service due on EFF and PRGF obligations after IMF assistance 7/	0.2	0.7	0.7	0.4	0.1	0.3	31.9	29.7	27.5	24.2	71.4	51.8	9.3	5.1	2.2
Principal	-	-	-	-	-	-	-	1.1	5.3	8.2	61.7	48.3	9.3	5.1	2.2
Interest	0.2	0.7	0.7	0.4	0.1	0.3	31.9	28.6	22.2	16.0	9.7	3.4	0.1	0.0	0.0
Proportion (in percent) of each repayment falling due during the period to be paid by HIPC assistance from the Umbrella Account	96.3	97.4	97.8	98.0	92.7	93.0	91.0	79.6	66.6	54.9	47.1	60.4	-	-	-
II. Debt relief provided at Completion Point (on stock basis in cash terms) 8/				898.8											
HIPC assistance				713.3											
Beyond-HIPC				185.5											
III. Debt service due to the IMF after HIPC and beyond-HIPC debt relief	0.2	0.7	0.7	0.4	4.7	0.3	0.3	1.4	5.6	8.5	10.6	12.9	9.3	5.1	2.2

Source: Fund staff estimates and projections.

1/ Total IMF assistance under the enhanced HIPC Initiative is US$ 732.2 million in NPV terms calculated on the basis of data available at end-June 2007. Of this amount, US$ 32.0 million represents the concessional element (through assumed completion point at end-2010) associated with the disbursement of a PRGF loan following Liberia's clearance of arrears to the IMF. The remaining balance of US$ 700.2 million will be provided as a grant toward debt relief under the HIPC Initiative.

2/ This section shows notional delivery of HIPC assistance on a flow basis. However, it is expected that total debt relief will be provided at completion point on a stock basis.

3/ The projected debt service is based on PRGF/EFF arrangements in the amount equal to the stock of arrears at arrears clearance, plus a new PRGF credit of 30 percent of quota under the 11th General Review which will be disbursed in 7 installments. Interest obligations do not include net SDR charges and assessments.

4/ EFF charges during the interim period are based on the adjusted rate of charge of 4.03 percent per annum as of March 13, 2008. Beyond the completion point, EFF charges are based on assumed SDR interest rate (gradually rising to 5 percent) plus 108 basis points and adjustments for deferred charges.

5/ The remaining IMF's grant HIPC assistance would be disbursed into the member's account at the assumed completion point in December 2010, which is reflected in the calculation of interest.

6/ Estimated interest earnings on: (a) amounts held in the member's Umbrella Account; and (b) up to the completion point, amounts committed but not yet disbursed. The projected interest earnings are estimated based on assumed interest rates which are gradually rising to 5 percent in 2013 and beyond; actual interest earnings may be higher or lower.

7/ Debt service after HIPC assistance during the interim period reflects Liberia's current payment capacity of about US$720,000 per annum.

8/ Associated with the stock of arrears at arrears clearance (subject to HIPC and beyond-HIPC assistance) and the first disbursement of new credit under the PRGF (subject to HIPC assistance).