EXECUTIVE BOARD MEETING

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Supplement 1

June 1, 2020

To: Members of the Executive Board

From: The Secretary

Subject: **Liberia—Request for Disbursement Under the Rapid Credit Facility—Debt Sustainability Analysis**

Board Action:	Executive Directors' **consideration** (Formal)
Prepared By:	The staffs of the Fund and the International Development Association
Tentative Board Date:	**Friday, June 5, 2020**
Publication:	Yes*
Questions:	Ms. Saito, AFR (ext. 36449) Mr. Jenya, AFR (ext. 36268) Ms. Tejada, AFR (ext. 38927)
Document Transmittal in the Absence of an Objection and in accordance with Board policy:	After Board Consideration—African Development Bank, World Trade Organization

***The authorities have indicated that they consent to the Fund's publication of this paper.**

LIBERIA

June 1, 2020

REQUEST FOR DISBURSEMENT UNDER THE RAPID CREDIT FACILITY—DEBT SUSTAINABILITY ANALYSIS

Approved By
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Prepared by the International Monetary Fund and the International Development Association.[1]

Risk of external debt distress	*Moderate*[2]
Overall risk of debt distress	*High*
Granularity in the risk rating	*Limited space to accommodate shocks*
Application of judgment	*No*
Macroeconomic projections	*With the impact of COVID-19, growth for 2020 is now projected at -2.5 percent for 2020, 3 percentage points below the pre-COVID baseline, largely due to lockdowns at home and abroad. In 2020, an emerging BOP need is projected at 5.3 percent of GDP, partly due to a sharp decline in service sector exports and remittances and delays in capital inflows. The terms-of-trade shock is positive since fuel import prices declined more than the prices of key exports (iron ore, rubber, and gold). The BOP need also stems from a sharp decline in revenue and an increase in COVID-19 response spending on health and social programs. The fiscal deficit is projected to increase to 5.1 percent of GDP in 2020.*
Financing strategy	*Additional financing needs are filled by the RCF, other multilateral institutions (i.e., World Bank and African Development Bank), and donor grants in FY2020 and FY2021.*[3]
Realism tools flagged	*Large unexpected change in public debt in the last 5 years. 3-year primary balance adjustment greater than 2.5 percentage points of GDP.*
Mechanical risk rating under the external DSA	*Moderate*
Mechanical risk rating under the public DSA	*High*

[1]Debt coverage has remained the same as in the previous DSA.

[2]Liberia's debt-carrying capacity based on the Composite Indicator (CI), which is based on the October 2019 WEO and the 2018 CPIA, is assessed as weak. The CI score is 2.41.

[3]See Table 2 of the main text for the COVID-19 response spending and sources of funding so far. The World Bank additional financing includes US$25 million of budget support and US$30 million of off-budget financing (primarily health and social protection programs).

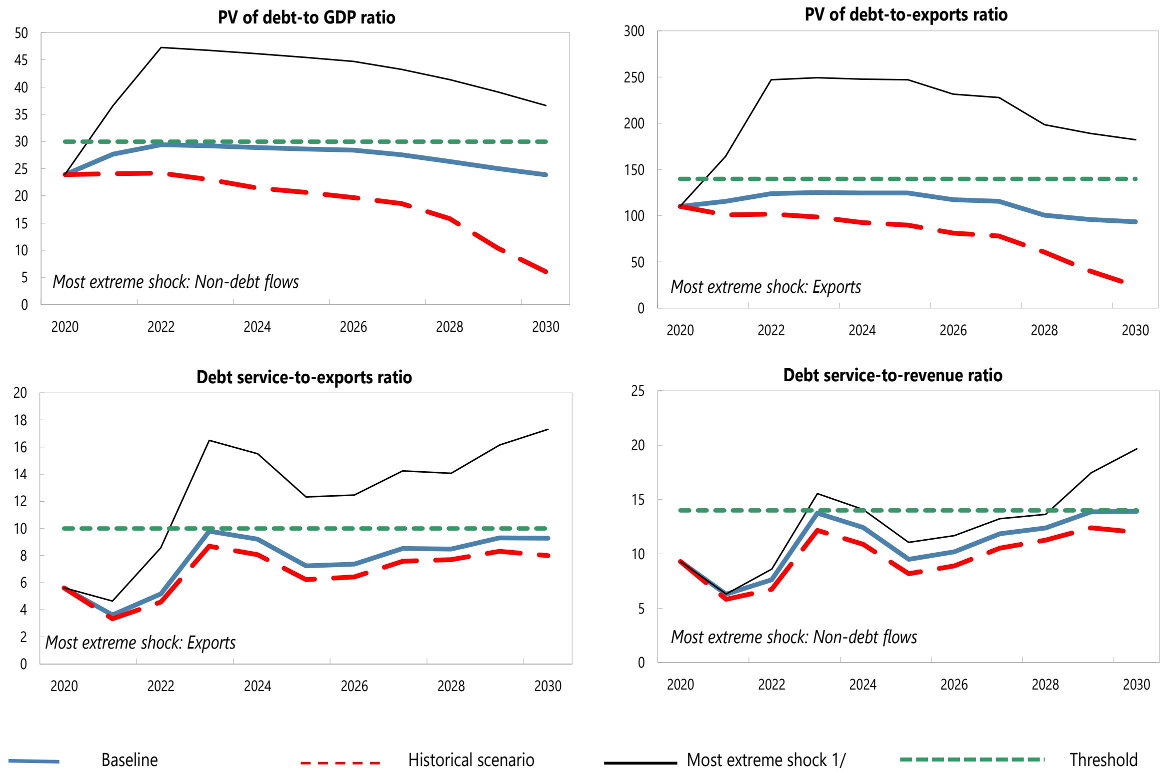
The Debt Sustainability Analysis (DSA) continues to assess Liberia at moderate risk of external debt distress and high risk of overall public debt distress, with very limited space to accommodate shocks and an extended breach of the PV of public debt-to-GDP ratio. However, public debt is assessed to be sustainable as (i) both the PV of public debt-to-GDP and PV of debt-to-revenue ratios are projected to be on a downward trend and (ii) the high PV of public debt ratios largely reflect debt to the central bank, for which the interest rate is relatively low but is not discounted in the PV calculations. Moreover, staff projects that there is a high likelihood that Liberia will be able to meet all of its current and future financial obligations.

The macroeconomic outlook is less favorable compared to the previous Debt Sustainability Analysis (DSA) in December 2019 due to the external shock caused by the COVID-19 pandemic. The analysis indicates that the impact of the COVID-19 shock, especially on the growth outlook, further reduces Liberia's space to absorb shocks relative to the previous DSA. However, Liberia remains at moderate risk of external debt distress. This DSA also points to the tension between the near-term borrowing need to minimize the COVID-19 impact and the need for medium-term borrowing space to support post-COVID-19 recovery, and in turn highlights the potential benefit of debt relief from the Catastrophe Containment Relief Trust (CCRT).[4] In addition, the authorities will request the debt service suspension from official bilateral creditors as envisaged under the Debt Service Suspension Initiative (DSSI) supported by the G-20 and Paris Club and intend to adhere to the needed commitments.[5] $1.2m of debt service will be suspended under DSSI. This debt suspension is reflected in the macro framework and the DSA, reducing debt service pressure in 2020. Staff considers the projected fiscal adjustment as realistic given that COVID-19 related spending is projected to phase out over time and given the authorities' fiscal measures taken and committed under the RCF and ECF-supported program. In this regard, the authorities should refrain from non-concessional borrowing in the near term and risky collateralized agreements at all times, while ensuring that new debt is contracted transparently. Due consideration should also be given to the country's absorption capacity, which remains low.

[4]The DSA and macro-framework assume CCRT debt service relief through April 2022. The last 18 months of debt service relief is subject to the availability of CCRT resources.

[5]Participation in the DSSI which provides a time-bound suspension of official bilateral debt service payments to IDA-eligible and least developed countries as defined by the UN would provide additional fiscal space in the near term.

Figure 1. Liberia: Indicators of Public and Publicly Guaranteed External Debt Under Alternative Scenarios, 2020-30



Customization of Default Settings	Size	Interactions
Tailored Stress		
Combined CL	No	
Natural disaster	n.a.	n.a.
Commodity price 2/	n.a.	n.a.
Market financing	n.a.	n.a.

Note: "Yes" indicates any change to the size or interactions of the default settings for the stress tests. "n.a." indicates that the stress test does not apply.

Borrowing assumptions on additional financing needs resulting from the stress tests*	Default	User defined
Shares of marginal debt		
External PPG MLT debt	100%	
Terms of marginal debt		
Avg. nominal interest rate on new borrowing in USD	0.9%	0.9%
USD Discount rate	5.0%	5.0%
Avg. maturity (incl. grace period)	31	31
Avg. grace period	7	7

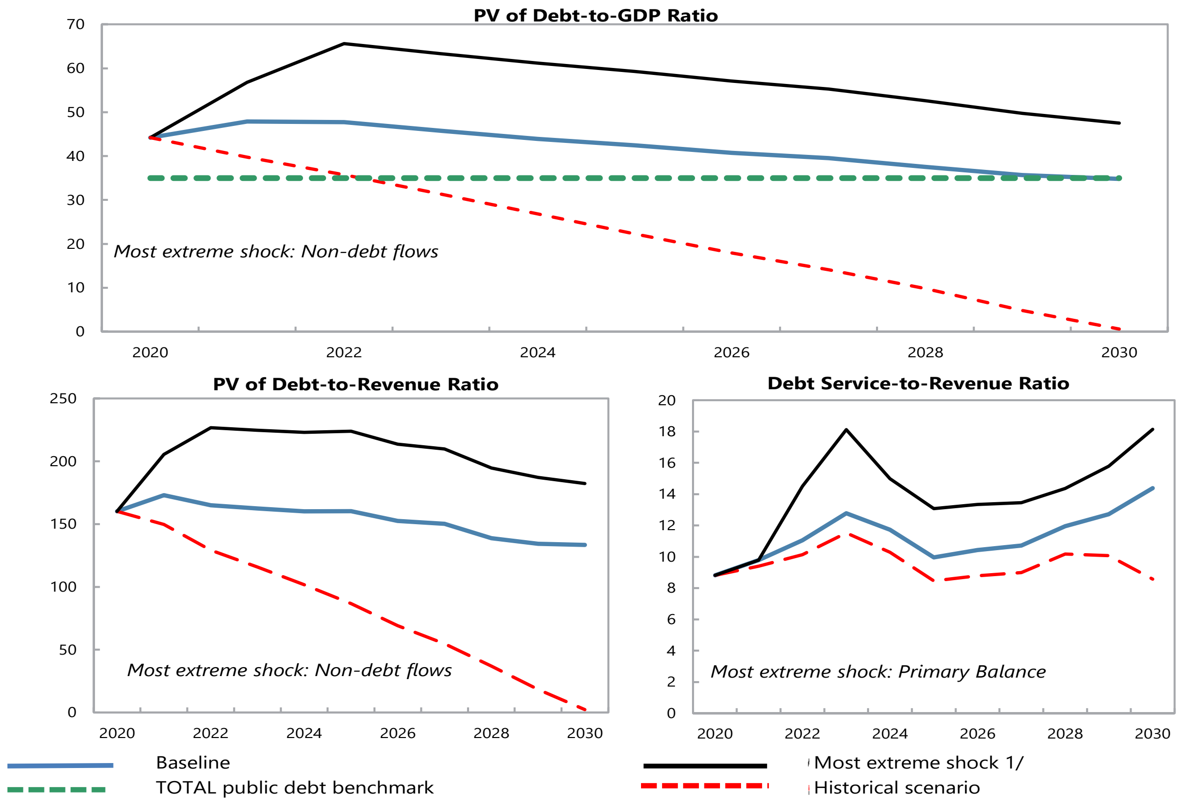
* Note: All the additional financing needs generated by the shocks under the stress tests are assumed to be covered by PPG external MLT debt in the external DSA. Default terms of marginal debt are based on baseline 10-year projections.

Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in or before 2030. The stress test with a one-off breach is also presented (if any), while the one-off breach is deemed away for mechanical signals. When a stress test with a one-off breach happens to be the most exterme shock even after disregarding the one-off breach, only that stress test (with a one-off breach) would be presented.

2/ The magnitude of shocks used for the commodity price shock stress test are based on the commodity prices outlook prepared by the IMF research department.

Figure 2. Liberia: Indicators of Debt Under Alternative Scenarios, 2020-30



Borrowing assumptions on additional financing needs resulting from the stress tests*	Default	User defined
Shares of marginal debt		
External PPG medium and long-term	80%	80%
Domestic medium and long-term	15%	15%
Domestic short-term	5%	5%
Terms of marginal debt		
External MLT debt		
Avg. nominal interest rate on new borrowing in USD	0.9%	0.9%
Avg. maturity (incl. grace period)	31	31
Avg. grace period	7	7
Domestic MLT debt		
Avg. real interest rate on new borrowing	8.3%	8.3%
Avg. maturity (incl. grace period)	10	10
Avg. grace period	0	0
Domestic short-term debt		
Avg. real interest rate	5.8%	5.8%

* Note: The public DSA allows for domestic financing to cover the additional financing needs generated by the shocks under the stress tests in the public DSA. Default terms of marginal debt are based on baseline 10-year projections.

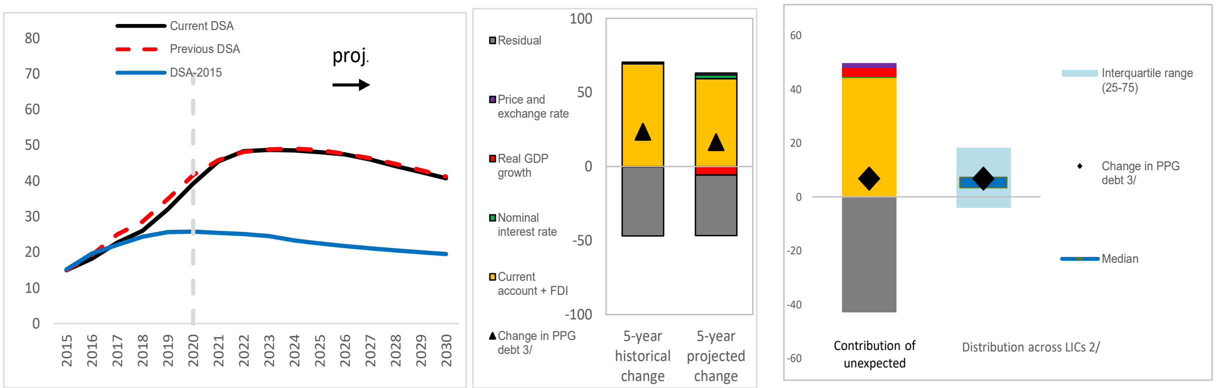
Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in or before 2030. The stress test with a one-off breach is also presented (if any), while the one-off breach is deemed away for mechanical signals. When a stress test with a one-off breach happens to be the most exterme shock even after disregarding the one-off breach, only that stress test (with a one-off breach) would be presented.

Figure 3. Liberia: Drivers of Debt Dynamics – Baseline Scenario

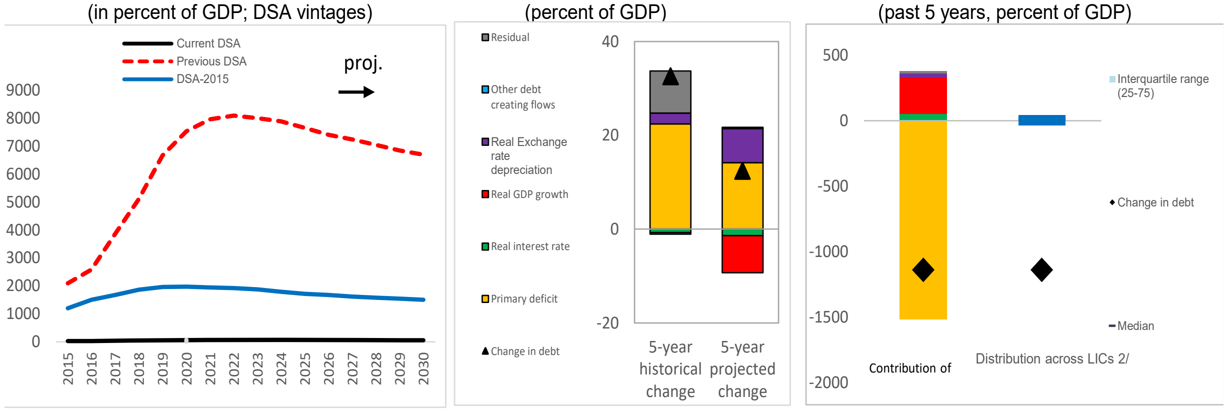
External debt

Gross Nominal PPG External Debt (in percent of GDP; DSA vintages) | Debt-creating flows (percent of GDP) | Unexpected Changes in Debt 1/ (past 5 years, percent of GDP)



Public debt

Gross Nominal Public Debt (in percent of GDP; DSA vintages) | Debt-creating flows (percent of GDP) | Unexpected Changes in Debt 1/ (past 5 years, percent of GDP)



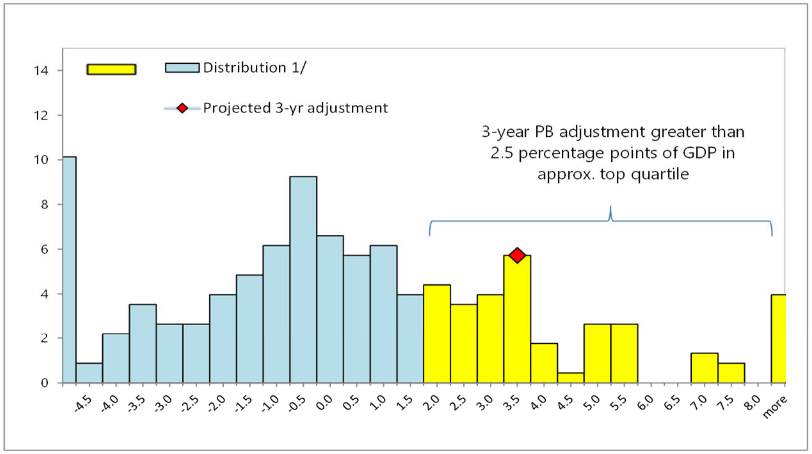
1/ Difference between anticipated and actual contributions on debt ratios.

2/ Distribution across LICs for which LIC DSAs were produced.

3/ Given the relatively low private external debt for average low-income countries, a ppt change in PPG external debt should be largely explained by the drivers of the external debt dynamics equation.

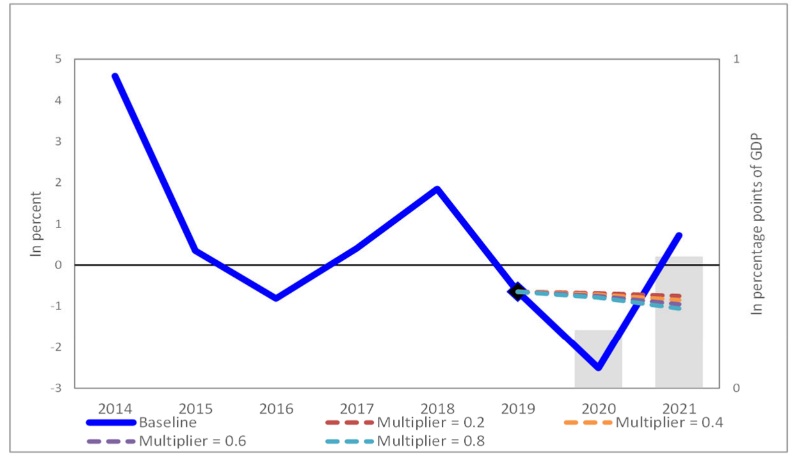
Figure 4. Liberia: Realism Tools

3-Year Adjustment in Primary Balance (Percentage points of GDP)



1/ Data cover Fund-supported programs for LICs (excluding emergency financing) approved since 1990. The size of 3-year adjustment from program inception is found on the horizontal axis; the percent of sample is found on the vertical axis.

Fiscal Adjustment and Possible Growth Paths 1/



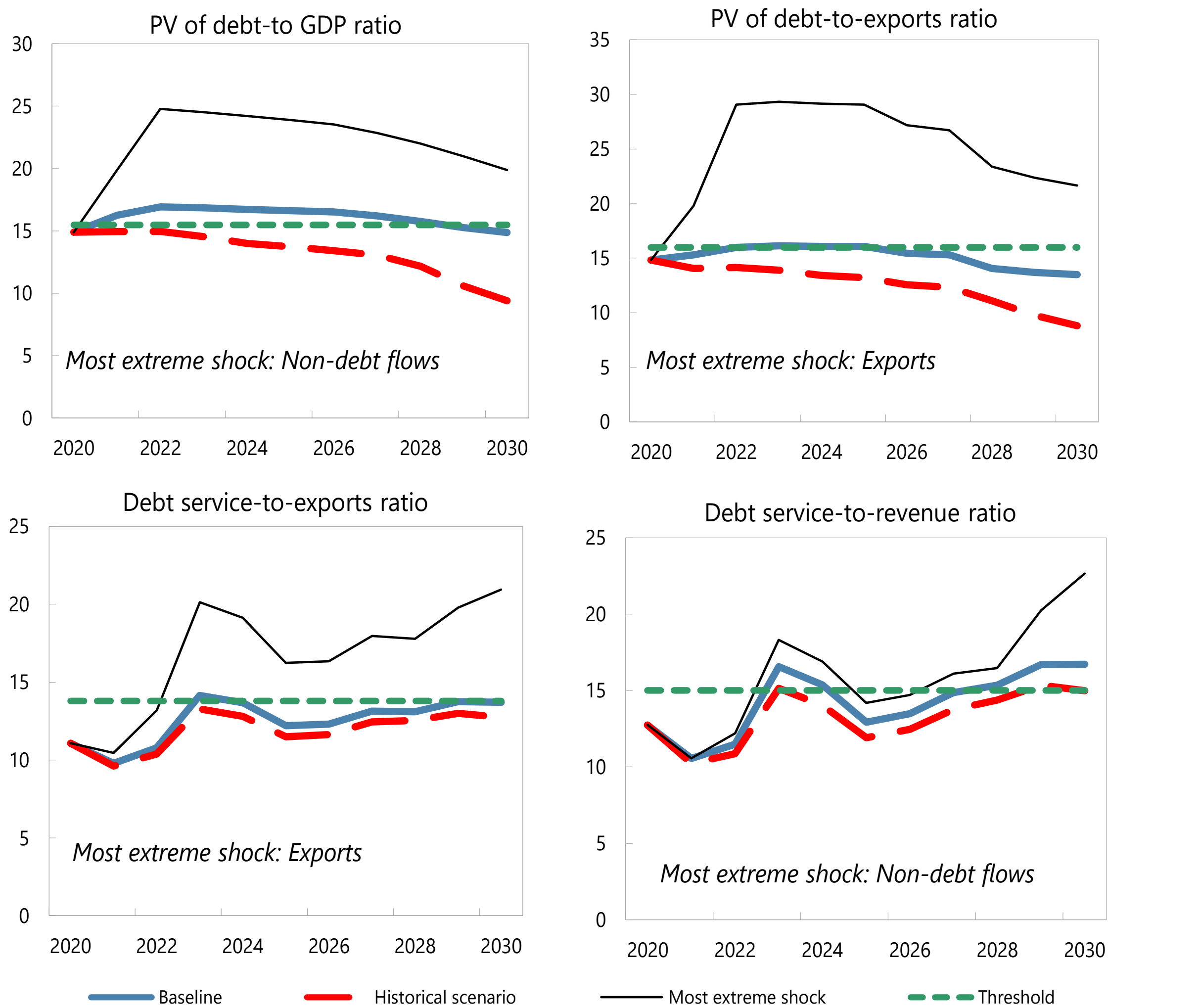
1/ Bars refer to annual projected fiscal adjustment (right-hand side scale) and lines show possible real GDP growth paths under different fiscal multipliers (left-hand side scale).

Figure 5. Liberia: Qualification of the Moderate Category, 2020-30[1/]

Sources: Country authorities; and staff estimates and projections.

1/ For the PV debt/GDP and PV debt/exports thresholds, x is 20 percent and y is 40 percent. For debt service/Exports and debt service/revenue thresholds, x is 12 percent and y is 35 percent.

Figure 6. Liberia: Probability of Debt Distress of Public and Publicly Guaranteed External Debt Under Alternative Scenarios[1/]



1/ The probability approach focuses on the evolution of the probability of debt distress over time, rather than on the evolution of debt burden indicators.

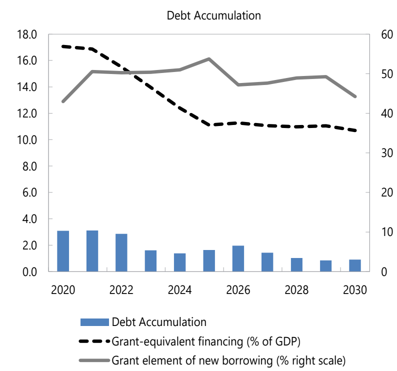
Sources: Country authorities; and staff estimates and projections.

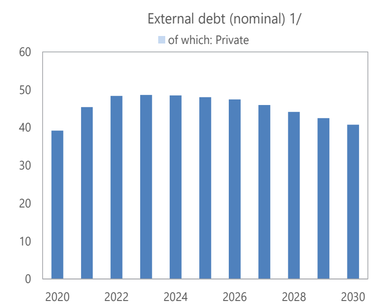
Table 1. Liberia: External Debt Sustainability Framework, Baseline Scenario, 2017-40

(Percent of GDP, unless otherwise indicated)

	Actual			Projections								Average 8/	
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2030	2040	Historical	Projections
External debt (nominal) 1/	**22.7**	**26.0**	**32.1**	**39.2**	**45.4**	**48.3**	**48.6**	**48.5**	**48.1**	**40.8**	**31.6**	**14.9**	**45.4**
of which: public and publicly guaranteed (PPG)	**22.7**	**26.0**	**32.1**	**39.2**	**45.4**	**48.3**	**48.6**	**48.5**	**48.1**	**40.8**	**31.6**	**14.9**	**45.4**
Change in external debt	4.5	3.3	6.1	7.2	6.2	2.9	0.3	-0.1	-0.5	-1.7	-1.2		
Identified net debt-creating flows	**15.3**	**13.4**	**14.8**	**15.5**	**12.0**	**9.7**	**9.3**	**9.6**	**8.2**	**15.0**	**9.6**	**8.9**	**11.3**
Non-interest current account deficit	**22.8**	**22.0**	**21.6**	**21.7**	**19.8**	**19.6**	**20.2**	**20.2**	**19.4**	**16.7**	**10.8**	**19.6**	**19.4**
Deficit in balance of goods and services	39.1	31.8	28.5	27.0	26.2	25.5	25.1	24.0	23.3	21.6	14.4	**47.6**	**24.2**
Exports	20.7	20.2	20.9	21.7	23.9	23.7	23.3	23.2	22.9	25.5	21.8		
Imports	59.7	52.1	49.4	48.7	50.1	49.3	48.4	47.2	46.2	47.2	36.2		
Net current transfers (negative = inflow)	-22.7	-18.5	-17.8	-17.0	-18.2	-17.1	-15.7	-13.7	-13.1	-10.4	-6.6	**-36.4**	**-13.8**
of which: official	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Other current account flows (negative = net inflow)	6.4	8.7	10.9	11.7	11.8	11.2	10.8	9.9	9.2	5.4	2.9	**8.5**	**9.1**
Net FDI (negative = inflow)	**-7.4**	**-8.7**	**-7.9**	**-7.6**	**-8.1**	**-8.5**	**-9.3**	**-8.8**	**-9.0**	**0.0**	**0.0**	**-10.9**	**-6.7**
Endogenous debt dynamics 2/	**-0.1**	**0.1**	**1.1**	**1.4**	**0.2**	**-1.3**	**-1.6**	**-1.9**	**-2.2**	**-1.8**	**-1.2**		
Contribution from nominal interest rate	0.2	0.3	0.3	0.5	0.5	0.5	0.5	0.5	0.3	0.3	0.4		
Contribution from real GDP growth	-0.1	-0.4	0.2	0.8	-0.3	-1.8	-2.1	-2.4	-2.4	-2.1	-1.6		
Contribution from price and exchange rate changes	-0.2	0.2	0.6	...	...	...	...	...	...	...	...		
Residual 3/	**-10.8**	**-10.1**	**-8.6**	**-8.4**	**-5.8**	**-6.8**	**-9.0**	**-9.7**	**-8.7**	**-16.7**	**-10.7**	**-6.0**	**-10.6**
of which: exceptional financing	0.0	0.0	0.0	-0.7	-1.1	-0.4	0.0	0.0	0.0	0.0	0.0		
Sustainability indicators													
PV of PPG external debt-to-GDP ratio	**...**	**...**	**19.6**	**23.9**	**27.7**	**29.4**	**29.2**	**28.9**	**28.6**	**23.9**	**21.4**		
PV of PPG external debt-to-exports ratio	**...**	**...**	**93.8**	**110.2**	**115.8**	**123.8**	**125.2**	**124.7**	**124.7**	**93.6**	**98.2**		
PPG debt service-to-exports ratio	**1.5**	**3.3**	**4.3**	**5.6**	**3.6**	**5.2**	**9.8**	**9.2**	**7.2**	**9.3**	**8.1**		
PPG debt service-to-revenue ratio	**2.1**	**5.1**	**6.2**	**9.3**	**6.3**	**7.6**	**13.7**	**12.4**	**9.5**	**13.9**	**8.9**		
Gross external financing need (Million of U.S. dollars)	509.9	456.6	462.3	461.6	372.2	375.0	428.8	466.4	441.8	1043.5	1455.1		
Key macroeconomic assumptions													
Real GDP growth (in percent)	0.4	1.8	-0.6	-2.5	0.7	4.2	4.7	5.2	5.4	5.3	5.3	**3.3**	**4.0**
GDP deflator in US dollar terms (change in percent)	1.3	-0.9	-2.4	-2.8	-2.9	-0.4	1.4	0.7	1.2	3.1	2.1	**2.7**	**1.0**
Effective interest rate (percent) 4/	0.9	1.3	1.0	1.6	1.2	1.2	1.2	1.1	0.6	0.8	1.3	**1.1**	**0.9**
Growth of exports of G&S (US dollar terms, in percent)	0.1	-1.2	0.0	-1.4	7.6	3.2	4.3	5.2	5.7	6.4	4.8	**5.8**	**7.1**
Growth of imports of G&S (US dollar terms, in percent)	-18.3	-12.0	-8.1	-6.5	0.6	2.0	4.3	3.1	4.5	4.9	5.0	**1.3**	**4.8**
Grant element of new public sector borrowing (in percent)	...	...	...	42.9	50.5	50.2	50.3	51.0	53.7	44.2	32.2	**...**	**48.7**
Government revenues (excluding grants, in percent of GDP)	14.3	12.9	14.4	13.1	13.7	16.1	16.7	17.2	17.5	17.0	19.9	**15.1**	**16.5**
Aid flows (in Million of US dollars) 5/	663.4	549.7	588.0	534.6	532.2	507.5	484.0	457.8	454.3	636.0	1160.8		
Grant-equivalent financing (in percent of GDP) 6/	...	...	...	17.1	16.9	15.5	14.0	12.4	11.1	10.7	9.4	**...**	**12.9**
Grant-equivalent financing (in percent of external financing) 6/	...	...	...	83.1	85.7	85.4	85.3	85.8	85.8	83.9	84.7	**...**	**84.8**
Nominal GDP (Million of US dollars)	3,244	3,274	3,174	3,006	2,941	3,053	3,241	3,433	3,662	5,465	11,584		
Nominal dollar GDP growth	1.7	0.9	-3.0	-5.3	-2.2	3.8	6.2	5.9	6.7	8.6	7.5	**6.1**	**5.2**
Memorandum items:													
PV of external debt 7/	...	...	19.6	23.9	27.7	29.4	29.2	28.9	28.6	23.9	21.4		
In percent of exports	...	...	93.8	110.2	115.8	123.8	125.2	124.7	124.7	93.6	98.2		
Total external debt service-to-exports ratio	1.5	3.3	4.3	5.6	3.6	5.2	9.8	9.2	7.2	9.3	8.1		
PV of PPG external debt (in Million of US dollars)			621.3	719.6	813.4	897.6	946.7	991.5	1047.6	1305.3	2482.9		
(PVt-PVt-1)/GDPt-1 (in percent)				3.1	3.1	2.9	1.6	1.4	1.6	0.9	1.0		
Non-interest current account deficit that stabilizes debt ratio	18.3	18.7	15.5	14.5	13.7	16.6	19.9	20.4	19.8	18.5	12.0		

Definition of external/domestic debt	Residency-based
Is there a material difference between the two criteria?	No





Sources: Country authorities; and staff estimates and projections.

1/ Includes both public and private sector external debt.

2/ Derived as $[r - g - \rho(1+g) + \varepsilon\alpha (1+r)]/(1+g+\rho+g\rho)$ times previous period debt ratio, with r = nominal interest rate; g = real GDP growth rate, ρ = growth rate of GDP deflator in U.S. dollar terms, Ɛ=nominal appreciation of the local currency, and α= share of local currency-denominated external debt in total external debt.

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

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

6/ 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).

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

8/ Historical averages are generally derived over the past 10 years, subject to data availability, whereas projections averages are over the first year of projection and the next 10 years.

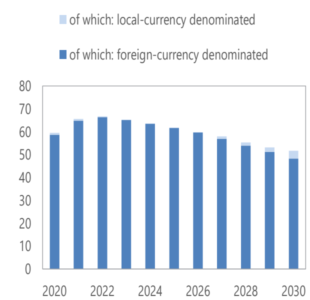
Table 2. Liberia: Public Sector Debt Sustainability Framework, Baseline Scenario, 2017-40

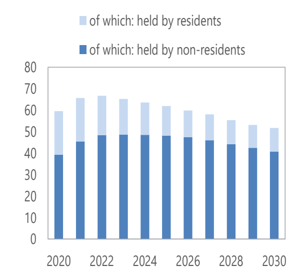
(Percent of GDP, unless otherwise indicated)

	Actual			Projections								Average 6/	
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2030	2040	Historical	Projections
Public sector debt 1/	33.9	36.6	51.1	59.5	65.6	66.7	65.2	63.5	61.9	51.7	42.9	26.8	60.0
of which: external debt	22.7	26.0	32.1	39.2	45.4	48.3	48.6	48.5	48.1	40.8	31.6	14.9	45.4
Change in public sector debt	6.8	2.7	14.5	8.4	6.1	1.1	-1.5	-1.7	-1.7	-1.5	-0.8		
Identified debt-creating flows	4.3	4.4	6.7	8.7	6.6	0.2	-1.8	-1.5	-0.4	-0.1	-0.9	-4.3	0.7
Primary deficit	4.5	4.2	5.2	5.0	4.6	1.8	1.3	1.5	3.2	3.6	1.2	-4.7	3.0
Revenue and grants	31.0	25.9	28.4	27.6	27.7	28.9	28.2	27.4	26.5	26.1	28.4	24.9	27.2
of which: grants	16.7	13.0	14.0	14.5	14.0	12.8	11.5	10.3	9.0	9.1	8.6		
Primary (noninterest) expenditure	35.5	30.2	33.6	32.6	32.2	30.8	29.5	28.9	29.7	29.7	29.7	20.2	30.2
Automatic debt dynamics	-0.2	0.1	1.6	3.7	2.0	-1.7	-3.1	-3.0	-3.6	-3.7	-2.1		
Contribution from interest rate/growth differential	-0.3	-0.8	-0.1	1.5	-0.4	-3.1	-3.5	-3.7	-4.1	-3.2	-2.1		
of which: contribution from average real interest rate	-0.1	-0.2	-0.3	0.2	0.0	-0.5	-0.5	-0.5	-0.8	-0.5	0.1		
of which: contribution from real GDP growth	-0.1	-0.6	0.2	1.3	-0.4	-2.6	-3.0	-3.2	-3.2	-2.7	-2.2		
Contribution from real exchange rate depreciation	0.0	1.0	1.7	...	...	...	...	...	...	...	...		
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	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 contingent liabilities (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		
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 debt creating or reducing flow (please specify)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Residual	2.5	-1.7	7.8	1.9	2.0	2.3	0.7	0.6	-0.8	-1.8	0.0	7.7	-0.1
Sustainability indicators													
PV of public debt-to-GDP ratio 2/	...	...	38.6	44.2	47.9	47.7	45.8	43.9	42.4	34.8	32.8		
PV of public debt-to-revenue and grants ratio	...	...	136.0	160.1	173.1	164.9	162.5	160.1	160.3	133.5	115.1		
Debt service-to-revenue and grants ratio 3/	2.4	3.6	6.0	8.8	9.8	11.1	12.8	11.7	10.0	14.4	14.3		
Gross financing need 4/	5.2	5.2	6.9	7.4	7.3	5.0	4.9	4.7	5.8	7.4	5.3		
Key macroeconomic and fiscal assumptions													
Real GDP growth (in percent)	0.4	1.8	-0.6	-2.5	0.7	4.2	4.7	5.2	5.4	5.3	5.3	3.3	4.0
Average nominal interest rate on external debt (in percent)	0.9	1.3	1.0	1.6	1.2	1.2	1.2	1.1	0.6	0.8	1.3	1.1	0.9
Average real interest rate on domestic debt (in percent)	0.3	3.1	9.6	5.7	5.7	3.4	1.5	2.2	1.8	1.1	3.5	-1.0	2.2
Real exchange rate depreciation (in percent, + indicates depreciation)	0.2	3.1	4.6	...	...	...	...	...	...	...	...	-0.9	...
Inflation rate (GDP deflator, in percent)	1.3	-0.9	-2.4	-2.8	-2.9	-0.4	1.4	0.7	1.2	3.1	2.1	2.7	1.0
Growth of real primary spending (deflated by GDP deflator, in percent)	-1.4	-13.4	10.5	-5.4	-0.4	-0.6	0.3	3.2	8.2	5.3	5.3	3.3	2.9
Primary deficit that stabilizes the debt-to-GDP ratio 5/	-2.3	1.5	-9.4	-3.4	-1.5	0.8	2.8	3.2	4.9	5.1	2.1	-3.4	3.0
PV of contingent liabilities (not included in public sector debt)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		

Definition of external/domestic debt	**Residency-based**
Is there a material difference between the two criteria?	**No**

Public sector debt 1/





Sources: Country authorities; and staff estimates and projections.

1/ Coverage of debt: The central government, central bank, government-guaranteed debt . Definition of external debt is Residency-based.

2/ The underlying PV of external debt-to-GDP ratio under the public DSA differs from the external DSA with the size of differences depending on exchange rates projections.

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

4/ 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 and other debt creating/reducing flows.

5/ Defined as a primary deficit minus a change in the public debt-to-GDP ratio ((-): a primary surplus), which would stabilizes the debt ratio only in the year in question.

6/ Historical averages are generally derived over the past 10 years, subject to data availability, whereas projections averages are over the first year of projection and the next 10 years.

Table 3. Liberia: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2020-30

(Percent)

	Projections 1/										
	2020	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**
PV of debt-to GDP ratio											
Baseline	24	28	29	29	29	29	28	28	26	25	24
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2020-2030 2/	24	24	24	23	21	21	20	19	16	10	6
B. Bound Tests											
B1. Real GDP growth	24	29	**33**	**33**	**32**	**32**	**32**	**31**	29	28	27
B2. Primary balance	24	**32**	**39**	**39**	**39**	**39**	**39**	**38**	**36**	**35**	**33**
B3. Exports	24	**31**	**39**	**38**	**38**	**38**	**37**	**36**	**34**	**33**	**31**
B4. Other flows 3/	24	**37**	**47**	**47**	**46**	**45**	**45**	**43**	**41**	**39**	**37**
B5. Depreciation	24	**35**	**32**	**32**	**31**	**31**	**31**	**30**	29	27	26
B6. Combination of B1-B5	24	**37**	**43**	**43**	**42**	**42**	**41**	**40**	**38**	**36**	**34**
C. Tailored Tests											
C1. Combined contingent liabilities	24	**33**	**36**	**35**	**35**	**35**	**35**	**34**	**32**	**31**	29
C2. Natural disaster	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C3. Commodity price	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C4. Market Financing	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Threshold	30	30	30	30	30	30	30	30	30	30	30
PV of debt-to-exports ratio											
Baseline	110	116	124	125	125	125	117	116	101	96	94
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2020-2030 2/	110	101	102	99	93	90	81	78	61	40	24
B. Bound Tests											
B1. Real GDP growth	110	116	124	125	125	125	117	116	101	96	94
B2. Primary balance	110	136	**165**	**169**	**169**	**170**	**160**	**158**	138	133	129
B3. Exports	110	**164**	**247**	**249**	**248**	**247**	**232**	**228**	**199**	**189**	**182**
B4. Other flows 3/	110	**153**	**199**	**201**	**199**	**198**	**185**	**182**	**158**	**150**	**144**
B5. Depreciation	110	116	106	107	107	107	101	100	87	83	81
B6. Combination of B1-B5	110	**163**	**164**	**205**	**204**	**203**	**190**	**187**	**163**	**155**	**149**
C. Tailored Tests											
C1. Combined contingent liabilities	110	140	**150**	**152**	**152**	**152**	**143**	**141**	123	118	116
C2. Natural disaster	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C3. Commodity price	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C4. Market Financing	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Threshold	140	140	140	140	140	140	140	140	140	140	140
Debt service-to-exports ratio											
Baseline	6	4	5	10	9	7	7	9	8	9	9
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2020-2030 2/	6	3	5	9	8	6	6	8	8	8	8
B. Bound Tests											
B1. Real GDP growth	6	4	5	10	9	7	7	9	8	9	9
B2. Primary balance	6	4	6	**11**	10	8	8	9	9	**11**	**11**
B3. Exports	6	5	9	**16**	**15**	**12**	**12**	**14**	**14**	**16**	**17**
B4. Other flows 3/	6	4	6	**11**	**10**	8	8	10	9	**12**	**13**
B5. Depreciation	6	4	5	9	9	7	7	8	8	9	8
B6. Combination of B1-B5	6	4	7	**13**	**12**	10	10	**11**	**11**	**14**	**14**
C. Tailored Tests											
C1. Combined contingent liabilities	6	4	6	**10**	10	8	8	9	9	10	10
C2. Natural disaster	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C3. Commodity price	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C4. Market Financing	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Threshold	10	10	10	10	10	10	10	10	10	10	10
Debt service-to-revenue ratio											
Baseline	9	6	8	14	12	9	10	12	12	14	14
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2020-2030 2/	9	6	7	12	11	8	9	11	11	12	12
B. Bound Tests											
B1. Real GDP growth	9	7	9	**15**	14	11	11	13	14	**16**	**16**
B2. Primary balance	9	6	8	**15**	13	10	11	13	13	**16**	**17**
B3. Exports	9	6	8	**15**	14	11	11	13	14	**16**	**17**
B4. Other flows 3/	9	6	9	**16**	**14**	11	12	13	14	**17**	**20**
B5. Depreciation	9	8	10	**17**	**15**	12	13	**15**	**15**	**17**	**16**
B6. Combination of B1-B5	9	7	9	**16**	**15**	11	12	14	**14**	**18**	**19**
C. Tailored Tests											
C1. Combined contingent liabilities	9	6	8	**14**	13	10	11	12	13	**14**	**14**
C2. Natural disaster	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C3. Commodity price	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C4. Market Financing	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Threshold	14	14	14	14	14	14	14	14	14	14	14

Sources: Country authorities; and staff estimates and projections.
1/ A bold value indicates a breach of the threshold.
2/ Variables include real GDP growth, GDP deflator (in U.S. dollar terms), non-interest current account in percent of GDP, and non-debt creating flows.
3/ Includes official and private transfers and FDI.

Table 4. Liberia: Sensitivity Analysis for Key Indicators of Public Debt, 2020-30

	Projections 1/										
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
						PV of Debt-to-GDP Ratio					
Baseline	**44**	**48**	**48**	**46**	**44**	**42**	**41**	**40**	**38**	**36**	35
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2020-2030 2/	**44**	**40**	**36**	31	27	22	18	14	10	5	1
B. Bound Tests											
B1. Real GDP growth	**44**	**51**	**56**	**55**	**54**	**54**	**54**	**53**	**52**	**51**	**51**
B2. Primary balance	**44**	**55**	**62**	**60**	**58**	**56**	**55**	**53**	**51**	**48**	**47**
B3. Exports	**44**	**51**	**55**	**53**	**51**	**49**	**48**	**46**	**44**	**42**	**40**
B4. Other flows 3/	**44**	**57**	**66**	**63**	**61**	**59**	**57**	**55**	**53**	**50**	**48**
B5. Depreciation	**44**	**53**	**51**	**48**	**45**	**42**	**39**	**37**	34	31	29
B6. Combination of B1-B5	**44**	**53**	**54**	**46**	**44**	**43**	**42**	**41**	**39**	**37**	**36**
C. Tailored Tests											
C1. Combined contingent liabilities	**44**	**57**	**56**	**55**	**53**	**51**	**50**	**48**	**46**	**44**	**43**
C2. Natural disaster	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C3. Commodity price	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C4. Market Financing	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
TOTAL public debt benchmark	35	35	35	35	35	35	35	35	35	35	35
						PV of Debt-to-Revenue Ratio					
Baseline	160	173	165	162	160	160	153	150	139	134	133
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2020-2030 2/	160	150	129	116	102	87	69	55	37	18	2
B. Bound Tests											
B1. Real GDP growth	160	181	183	186	190	197	193	195	186	185	188
B2. Primary balance	160	199	214	213	212	213	204	201	187	182	180
B3. Exports	160	183	191	188	186	187	178	175	162	156	154
B4. Other flows 3/	160	205	227	225	223	224	214	210	195	187	182
B5. Depreciation	160	199	184	175	168	163	151	144	129	120	115
B6. Combination of B1-B5	160	193	186	164	162	164	157	155	144	140	140
C. Tailored Tests											
C1. Combined contingent liabilities	160	204	195	194	192	194	186	183	170	166	165
C2. Natural disaster	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C3. Commodity price	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C4. Market Financing	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
						Debt Service-to-Revenue Ratio					
Baseline	9	10	11	13	12	10	10	11	12	13	14
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2020-2030 2/	9	9	10	12	10	8	9	9	10	10	9
B. Bound Tests											
B1. Real GDP growth	9	10	12	14	13	12	13	13	15	16	18
B2. Primary balance	9	10	15	18	15	13	13	13	14	16	18
B3. Exports	9	10	11	13	12	10	11	11	12	14	16
B4. Other flows 3/	9	10	12	14	13	11	11	12	13	15	18
B5. Depreciation	9	10	12	15	14	12	12	13	14	15	17
B6. Combination of B1-B5	9	10	11	13	12	10	10	11	12	13	14
C. Tailored Tests											
C1. Combined contingent liabilities	9	10	15	15	13	12	12	12	13	14	16
C2. Natural disaster	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C3. Commodity price	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C4. Market Financing	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Sources: Country authorities; and staff estimates and projections.

1/ A bold value indicates a breach of the benchmark.

2/ Variables include real GDP growth, GDP deflator and primary deficit in percent of GDP.

3/ Includes official and private transfers and FDI.