

EXECUTIVE  
BOARD  
MEETING

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April 27, 2020

To: Members of the Executive Board

From: The Secretary

Subject: **Mali—Requests for Disbursement Under the Rapid Credit Facility and Rephasing of Access Under the Extended Credit Facility Arrangement—Debt Sustainability Analysis**

Board Action:	Executive Directors' <b>consideration</b> (Formal)
Prepared By:	The staffs of the Fund and the International Development Association
Publication:	Yes*
Questions:	Ms. Cebotari, AFR (ext. 35417) Ms. Jankulov Suljagic, AFR (ext. 36479) Ms. Isakova, AFR (+43 676 722 3002)
Document Transmittal in the Absence of an Objection and in accordance with Board policy:	After Board Consideration—African Development Bank, Islamic Development Bank, Organisation for Economic Cooperation and Development, West African Economic and Monetary Union, World Trade Organization

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





# MALI

April 24, 2020

## REQUESTS FOR DISBURSEMENT UNDER THE RAPID CREDIT FACILITY AND FOR REPHASING OF ACCESS UNDER THE EXTENDED CREDIT FACILITY ARRANGEMENT —DEBT SUSTAINABILITY ANALYSIS

Approved By  
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Maria Gonzalez (IMF) and  
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Prepared by the staffs of the International Monetary Fund (IMF) and the International Development Association (IDA)

Mali	
<b>Joint Bank-Fund Staff Debt Sustainability Analysis<sup>1</sup></b>	
<b>Risk of external debt distress</b>	Moderate <sup>2</sup>
<b>Overall risk of debt distress</b>	Moderate
<b>Granularity in risk rating</b>	Some space to absorb shocks
<b>Application of judgement</b>	Yes, a customized scenario was used to take account of security challenges and sensitivity to small changes in financing terms (see the previous DSA, September 2019)
<b>Macroeconomic projections</b>	Growth revised down by 4.2 percentage points from previous DSA
<b>Financing strategy</b>	<b>External:</b> IMF RCF/World Bank IDA/BAD BOAD/other donors <b>Domestic:</b> Bonds/Bills issuances
<b>Realism tools flagged</b>	Yes, pessimistic growth in 2020 despite massive fiscal stimulus
<b>Mechanical risk rating under the external DSA</b>	Low
<b>Mechanical risk rating under the public DSA</b>	Low

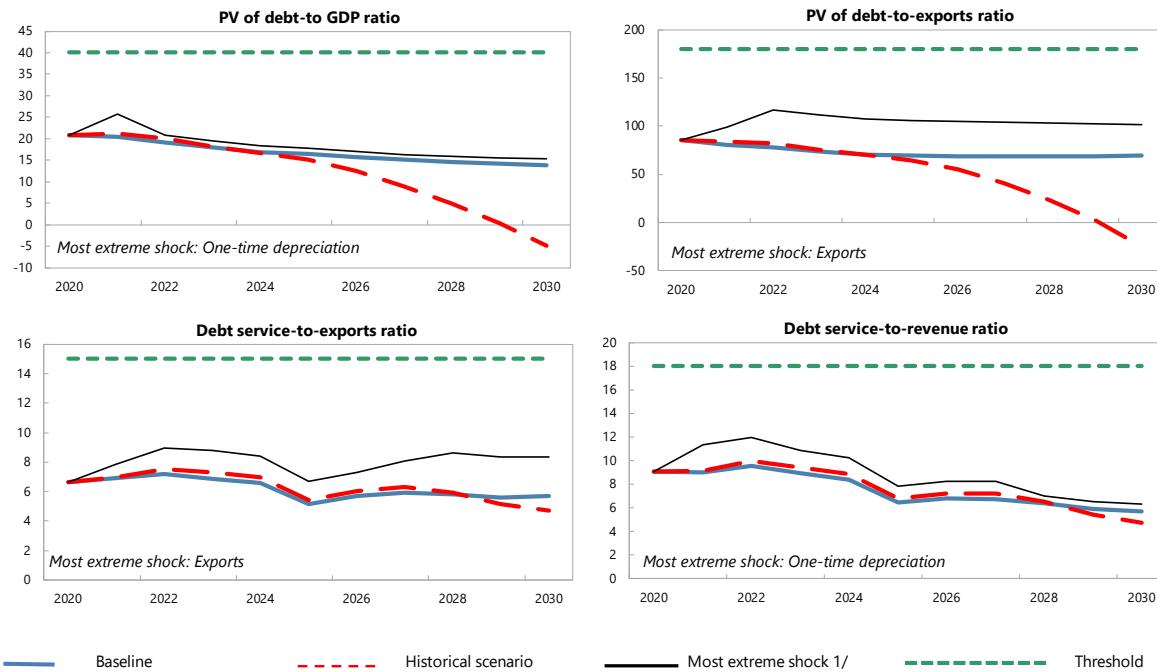
<sup>1</sup> Public debt coverage remains the central government debt, which is unchanged from the previous DSA.

<sup>2</sup> Mali's composite indicator is 3.02 based on October 2019 WEO and the 2018 CPIA, confirming the medium debt carrying capacity from the previous DSA.

*Under the COVID-19 baseline, Mali's risk of external and total public debt distress remains moderate – unchanged from the previous analysis (IMF Country Report/19/289). Overall public debt dynamics remain sustainable with some space to absorb shocks. A large share of fiscal and external financing needs is expected to be covered by concessional multilateral and bilateral creditor loans. All the projected external debt burden indicators remain below their thresholds under the baseline. However, applying judgment to take account of security challenges and sensitivity to small changes in financing terms, the ratio of external debt service to exports exceeds its threshold in the case of an extreme shock to exports under a customized scenario that incorporates 2 percentage points of GDP larger fiscal deficits.*

*Mali's main challenge continues to be ensuring macroeconomic stability while protecting social and investment spending and providing for growing security spending and large development needs especially given additional vulnerabilities arising from the COVID-19 Pandemic. To maintain sustainable level of debt, it is essential that the authorities continue their efforts to mobilize domestic revenue and implement reforms. Debt management capacity should be strengthened while deepening structural reforms to diversify the exports base.*

**Figure 1. Mali: Indicators of Public and Publicly Guaranteed External Debt Under Alternative Scenarios, 2020–30**



Customization of Default Settings		Borrowing assumptions on additional financing needs resulting from the stress tests*		
	Size	Interactions	Default	User defined
<b>Tailored Stress</b>				
Combined CL	No			
Natural disaster	n.a.	n.a.		
Commodity price	No	No		
Market financing	n.a.	n.a.		

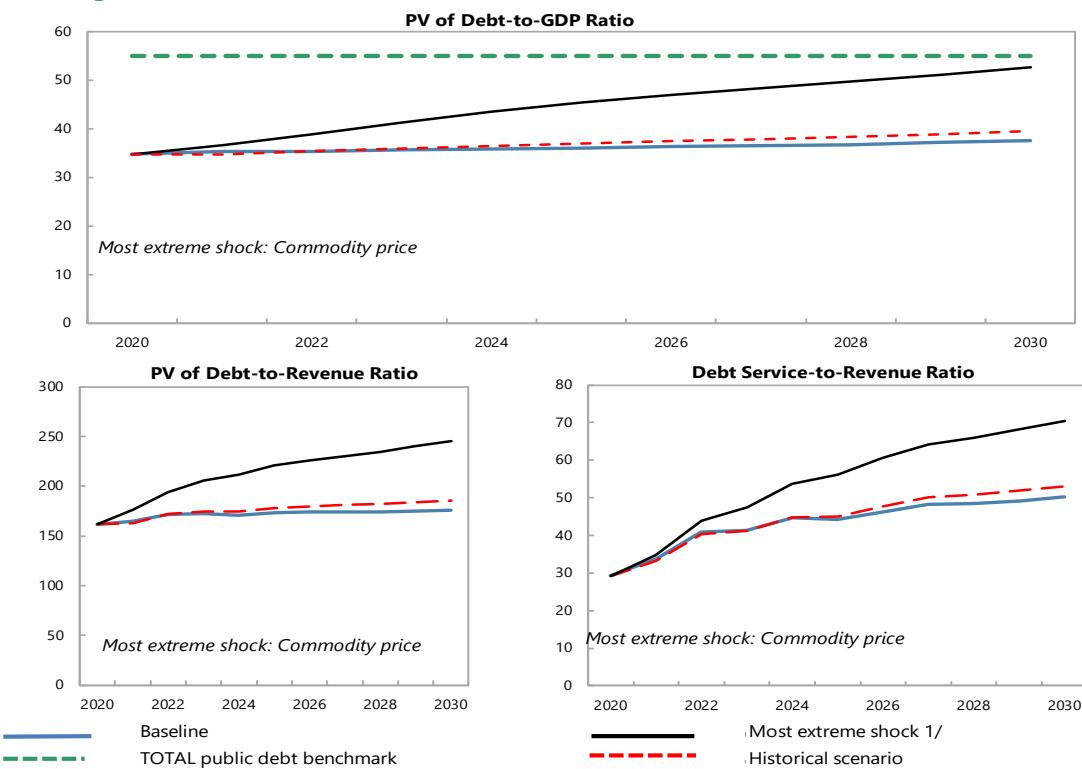
Note: "Yes" indicates any change to the size or interactions of the default settings for the stress tests. "n.a." indicates that the stress test does not apply.

\* 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 extreme 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.

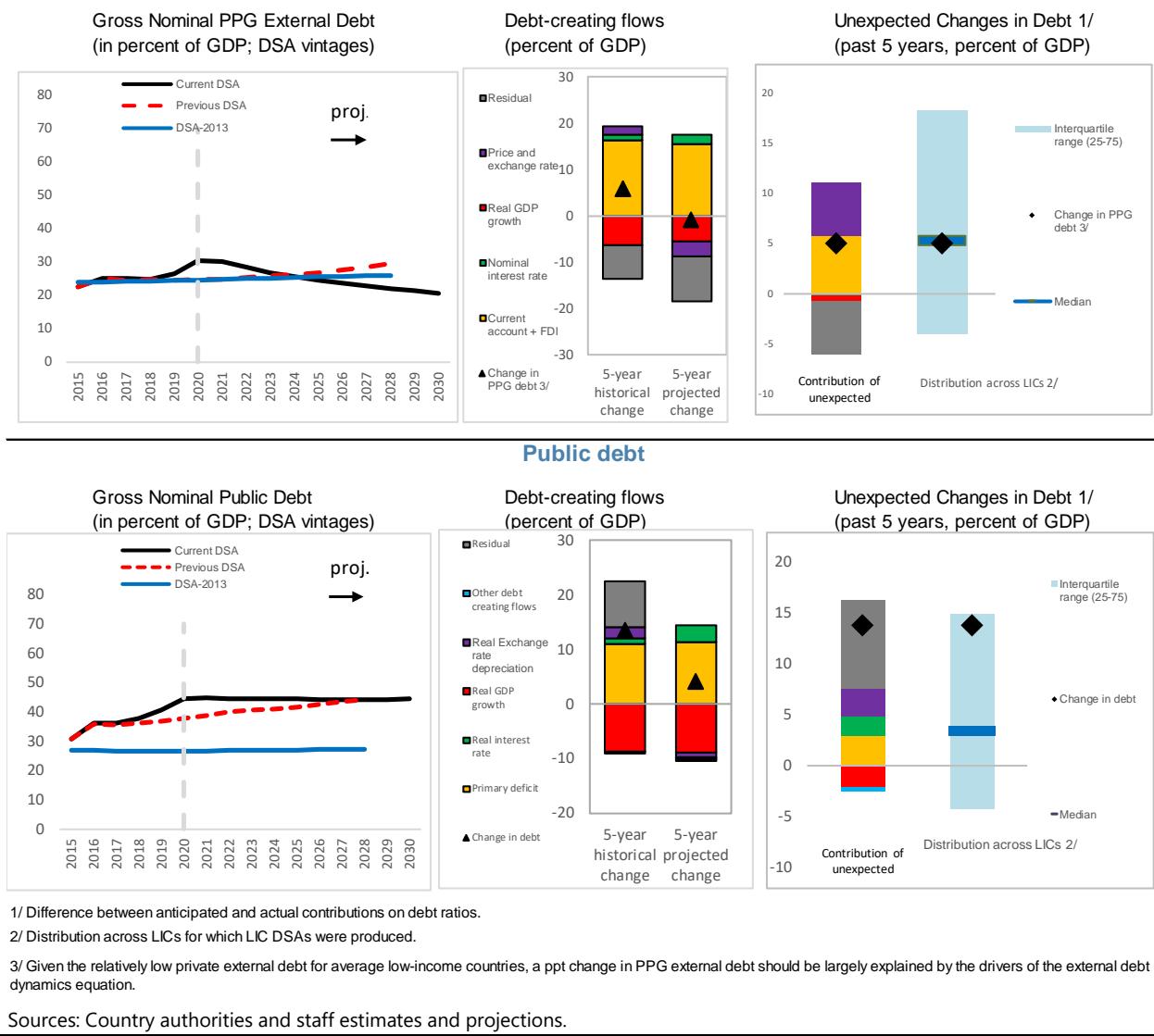
**Figure 2. Mali: Indicators of Public Debt Under Alternative Scenarios, 2020–30**

Borrowing assumptions on additional financing needs resulting from the stress tests*	Default	User defined
<b>Shares of marginal debt</b>		
External PPG medium and long-term	21%	21%
Domestic medium and long-term	71%	71%
Domestic short-term	8%	8%
<b>Terms of marginal debt</b>		
External MLT debt		
Avg. nominal interest rate on new borrowing in USD	1.3%	1.3%
Avg. maturity (incl. grace period)	28	28
Avg. grace period	5	5
Domestic MLT debt		
Avg. real interest rate on new borrowing	4.8%	4.8%
Avg. maturity (incl. grace period)	4	4
Avg. grace period	0	0
<b>Domestic short-term debt</b>		
Avg. real interest rate	4.5%	4.5%

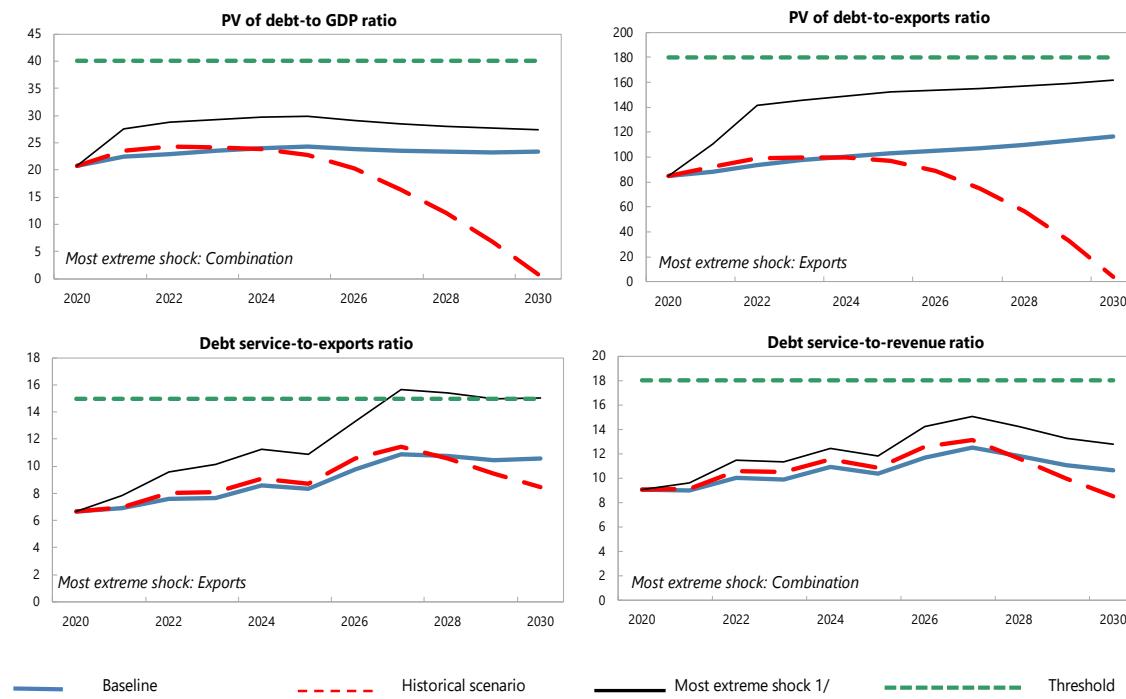
\* Note: The public DSA allows for domestic financing to cover the additional financing needs generated by the shocks under the stress tests in the public DSA. Default terms of marginal debt are based on baseline 10-year projections.

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 extreme shock even after disregarding the one-off breach, only that stress test (with a one-off breach) would be presented.

**Figure 3. Mali: Drivers of Debt Dynamics – Baseline Scenario**

**Figure 4. Mali: Indicators of Public and Publicly Guaranteed External Debt Under Customized Scenarios, 2020–30**



Customization of Default Settings		Borrowing assumptions on additional financing needs resulting from the stress tests*	
		Default	User defined
<b>Tailored Stress</b>			
Combined CL	No		
Natural disaster	n.a.	n.a.	
Commodity price	No	No	
Market financing	n.a.	n.a.	
<b>Shares of marginal debt</b>			
External PPG MLT debt		100%	
<b>Terms of marginal debt</b>			
Avg. nominal interest rate on new borrowing in USD	2.3%	2.3%	
USD Discount rate	5.0%	5.0%	
Avg. maturity (incl. grace period)	21	21	
Avg. grace period	4	4	

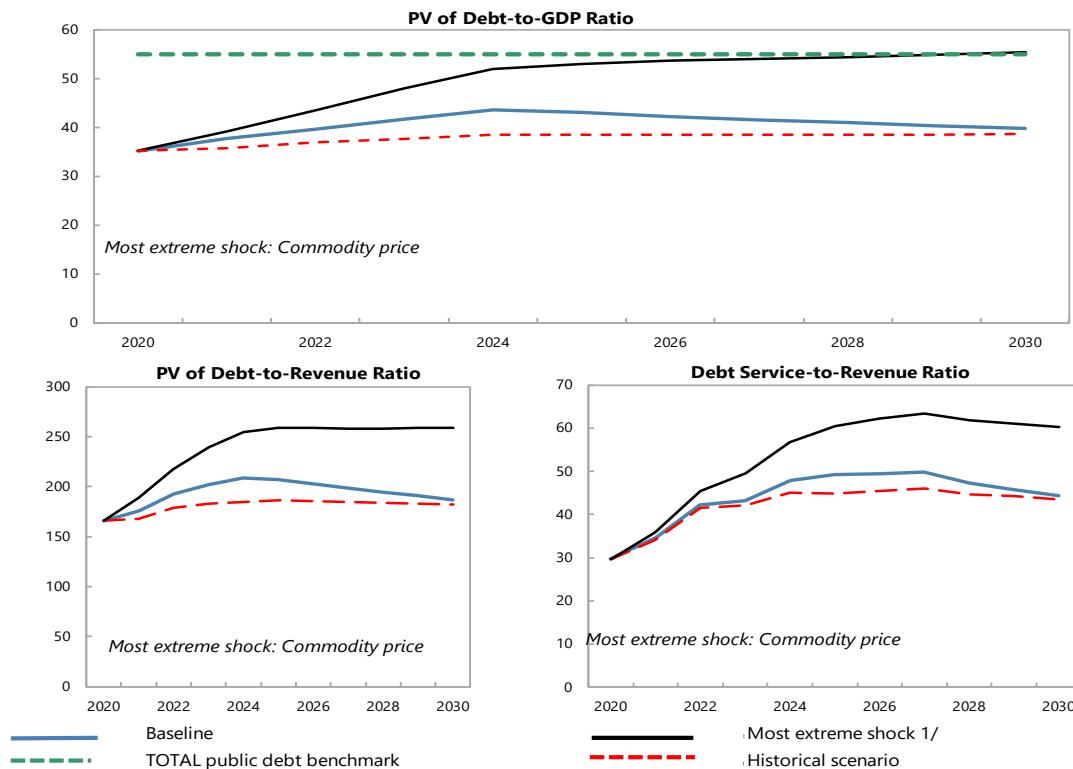
Note: "Yes" indicates any change to the size or interactions of the default settings for the stress tests. "n.a." indicates that the stress test does not apply.

\* 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 extreme 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.

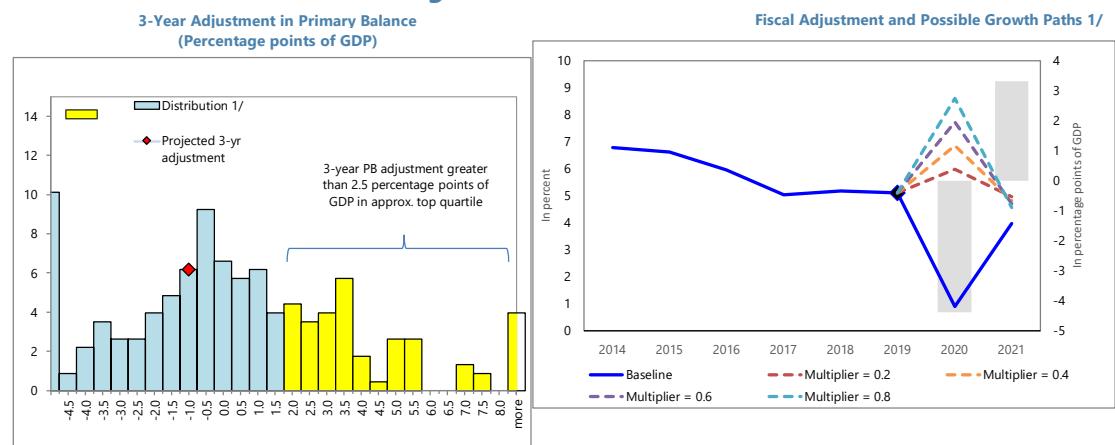
**Figure 5. Mali: Indicators of Public Debt Under Customized Scenarios, 2020–30**

Borrowing assumptions on additional financing needs resulting from the stress tests*	Default	User defined
<b>Shares of marginal debt</b>		
External PPG medium and long-term	36%	36%
Domestic medium and long-term	58%	58%
Domestic short-term	6%	6%
<b>Terms of marginal debt</b>		
<b>External MLT debt</b>		
Avg. nominal interest rate on new borrowing in USD	2.3%	2.3%
Avg. maturity (incl. grace period)	21	21
Avg. grace period	4	4
<b>Domestic MLT debt</b>		
Avg. real interest rate on new borrowing	4.8%	4.8%
Avg. maturity (incl. grace period)	4	4
Avg. grace period	0	0
<b>Domestic short-term debt</b>		
Avg. real interest rate	4.5%	4.5%

\* 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.

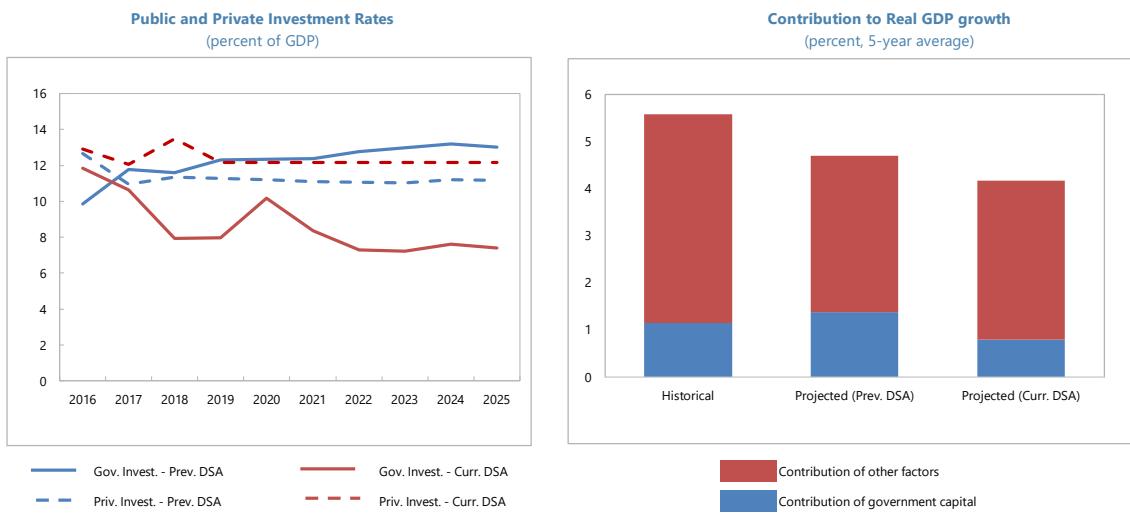
Sources: Country authorities; and staff estimates and projections.

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 extreme shock even after disregarding the one-off breach, only that stress test (with a one-off breach) would be presented.

**Figure 6. Mali: Realism Tools**

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.

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).



Sources: Country authorities and staff estimates and projections.

**Figure 7. Mali: Qualification of the Moderate Risk Category. 2019–29 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.

**Table 1. Mali: External Debt Sustainability Framework, Baseline Scenario, 2017–40**  
(In percent of GDP, unless otherwise indicated)

	Actual				Projections					Average 8/		
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	Historical
<b>External debt (nominal) 1/</b> <i>of which, public and publicly guaranteed (PPG)</i>	25.0	24.9	26.4	30.1	29.7	28.1	26.6	25.3	24.4	20.3	12.7	22.9
<b>Change in external debt:</b>	-0.1	-0.1	1.5	3.7	-0.4	-1.7	-1.5	-1.3	-0.9	-0.6	-0.7	24.8
<b>Identified net debt-creating flows</b>	1.6	-0.2	1.9	2.5	0.9	2.1	3.4	3.7	4.3	11.2	-0.7	5.4
<b>Non-interest current account deficit</b>	7.0	4.7	3.9	3.2	3.4	5.0	6.1	6.4	6.9	13.7	-0.2	7.8
<b>Deficit in balance of goods and services</b>	13.7	11.2	10.6	7.1	7.7	8.7	9.0	8.9	8.9	12.1	0.0	12.6
<b>Exports</b>	22.5	24.7	24.6	24.4	25.4	24.5	24.2	23.9	23.6	20.0	0.0	9.5
<b>Imports</b>	36.2	35.8	35.2	31.5	33.1	33.3	33.1	32.8	32.4	32.1	0.0	4.2
<b>Net current transfers (negative = inflow) of which official</b>	-9.7	-9.2	-9.5	-6.6	-7.0	-6.4	-5.6	-5.3	-4.6	-4.0	0.0	-4.2
<b>Other current account flows (negative = net inflow)</b>	-4.8	-4.4	-4.8	-3.5	-4.2	-4.0	-3.6	-3.8	-3.6	-2.9	0.0	-4.2
<b>Net FDI (negative = inflow)</b>	3.0	2.8	2.7	2.8	2.7	2.7	2.7	2.6	2.0	-0.2	3.0	2.5
<b>Endogenous debt dynamics 2/</b>	-3.6	-2.8	-1.8	-0.9	-1.7	-1.7	-1.7	-1.7	-1.7	-0.8	-0.7	-0.5
<b>Contribution from nominal interest rate</b>	0.3	0.2	0.3	0.4	0.4	0.4	0.4	0.4	0.3	0.2	0.2	0.2
<b>Contribution from real GDP growth</b>	-1.2	-1.2	-1.2	-1.0	-1.1	-1.6	-1.3	-1.2	-1.0	-0.7	-0.7	-0.7
<b>Contribution from price and exchange rate changes</b>	-1.0	-1.2	-0.7	...	...	...	...	...	...	...	...	3.0
<b>Residual 3/</b>	-1.6	0.1	-0.4	1.2	-1.3	-3.7	-4.9	-5.1	-5.2	-11.9	-2.3	-1.1
<b>of which exceptional financing</b>	-0.2	-0.2	-0.2	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	2.0
<b>Gross external financing need (Million of U.S. dollars)</b>	6912	4850	5847	7091	6391	1043.2	1331.5	1473.8	1605.6	4725.0	540.4	20
<b>Sustainability indicators</b>												1.0
<b>PV of PPG external debt-to-GDP ratio</b>	...	...	17.9	20.8	20.4	19.2	18.1	17.1	16.7	14.0	9.5	15
<b>PV of PPG external debt-to-exports ratio</b>	...	...	72.9	85.1	80.4	78.1	74.8	71.7	71.1	70.1	...	2020
<b>PPG debt service-to-exports ratio</b>	4.6	3.7	5.2	6.6	6.9	7.2	6.9	6.7	5.3	6.2	...	2022
<b>PPG debt service-to-revenue ratio</b>	5.6	6.3	6.6	9.1	9.0	9.6	9.0	8.5	6.6	6.2	...	2024
<b>Key macroeconomic assumptions</b>												20
Real GDP growth (in percent)	5.0	5.2	5.1	0.9	4.0	6.0	5.0	5.0	5.0	5.0	5.0	4.6
GDP deflator in U.S. dollar terms (change in percent)	4.2	5.1	-2.9	1.3	2.8	2.5	2.3	2.2	1.2	2.0	11.7	2.1
Effective interest rate (percent) 4/	1.1	1.0	1.3	1.4	1.5	1.5	1.5	1.5	1.4	1.3	1.5	1.3
Growth of exports of G6S (U.S. dollar terms, in percent)	5.0	21.3	1.8	1.5	11.0	5.0	5.9	6.1	4.8	4.0	100.0	6.6
Growth of imports of G6S (U.S. dollar terms, in percent)	-1.7	9.5	0.3	-8.4	12.0	9.3	7.0	6.2	5.1	6.8	100.0	6.1
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	...	...	...	...	...	#DIV/0!	...
Government revenues (excluding grants, in percent of GDP)	18.4	14.4	19.5	17.9	19.4	18.5	18.7	18.8	18.9	19.8	19.0	37.8
Ad. Tax (in Million of US dollars) 5/	248.1	210.8	326.5	857.5	662.5	701.8	712.8	759.9	849.7	0.0	15.8	30
Grant-equivalent financing (in percent of external financing) 6/	...	...	...	...	4.9	3.0	2.9	2.7	2.5	2.1	...	2.7
Normal GGP (Million of US dollars)	15,360	16,978	17,331	17,717	18,933	20,574	22,093	23,708	25,191	35,852	79,643	67.5
Nominal dollar/GDP growth	9.5	10.5	2.1	2.2	6.9	8.7	7.4	7.3	6.3	7.1	17.3	5.7
<b>Memorandum items:</b>												15
PV of external debt 7/	...	...	17.9	20.8	20.4	19.2	18.1	17.1	16.7	14.0	9.5	10
In percent of exports	...	...	72.9	85.1	80.4	78.1	74.8	71.7	71.1	70.1	...	5
Total external debt service-to-exports ratio	4.6	3.7	5.2	6.6	6.9	7.2	6.9	6.7	5.3	6.2	...	35
PV of PPG external debt (in Million of US dollars)	...	...	3110.2	3638.7	3862.4	3916.6	3993.5	4065.5	4218.3	5021.8	7535.3	0
(PV-PVt)/(GDPt-1) (in percent)	7.1	4.8	2.3	-0.5	3.8	6.7	7.5	7.7	7.8	14.3	2.8	2020
Non-interest current account deficit that stabilizes debt ratio	7.1	4.8	2.3	-0.5	3.8	6.7	7.5	7.7	7.8	14.3	2.8	2030

Sources: County authorities; and staff estimates and projections.

1/Includes both public and private sector external debt.

2/Defined as  $(1 - g + r - p)/(1 + g - p)$ , where  $g$  = real GDP growth rate,  $r$  = nominal interest rate, and  $p$  = 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. Projections also includes contribution from price and exchange rate changes.

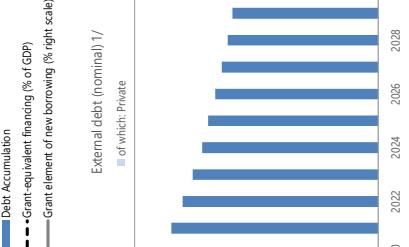
4/Current-year interest payments divided by previous period debt stock.

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 equal to its face value.

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



Sources: County authorities; and staff estimates and projections.

1/Includes both public and private sector external debt.

2/Defined as  $(1 - g + r - p)/(1 + g - p)$ , where  $g$  = real GDP growth rate,  $r$  = nominal interest rate, and  $p$  = growth rate of GDP deflator in U.S. dollar terms.

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

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

**Table 2. Mali: Public Sector Debt Sustainability Framework, Baseline Scenario, 2017–40**  
 (In percent of GDP, unless otherwise indicated)

	Actual						Projections						Average 6/						
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2030	2040	Historical Projections	2017	2020	2024	2028	2030		
Public sector debt / of which: external debt	36.0 25.0	37.7 24.9	40.4 26.4	44.7 30.1	45.1 29.7	44.9 28.1	44.8 26.6	44.9 25.3	44.8 24.4	44.6 20.3	41.3 12.7	30.9 22.9	44.7 24.8						
Change in public sector debt	0.0	1.7	2.7	4.2	0.4	-0.2	0.0	0.0	-0.1	0.1	-4.8	0.9	0.5						
Identified debt-creating flows	-2.3 2.0	3.6 3.9	-0.6 0.7	4.3 5.0	0.2 1.7	-0.5 1.6	0.0 1.5	0.0 1.5	0.1 1.5	0.3 1.5	-4.8 0.0	0.9 2.1	0.5 1.8						
Primary deficit																			
Revenue and grants of which: grants	1.6 22.1	1.2 19.5	1.9 22.1	3.0 26.0	2.0 23.1	2.1 22.1	2.0 22.1	2.0 22.2	1.9 22.2	1.9 22.8	0.0 0.0	17.8 0.0	20.9 22.7						
Primary (noninterest) expenditure																			
Automatic debt dynamics	-4.2 -1.6	-0.2 -1.6	-1.2 -1.6	-0.1 0.4	-1.3 0.4	-2.1 -1.2	-1.5 -1.2	-1.5 -2.0	-1.4 -2.0	-1.4 -2.0	-1.4 -1.4	-1.2 -1.2	-4.8 -3.5						
Contribution from interest rate/growth differential of which: contribution from average real interest rate of which: contribution from real GDP growth	0.1 -1.7	0.2 -1.8	0.2 -1.8	0.4 -0.4	0.4 -1.7	0.7 -2.6	0.6 -2.1	0.7 -2.1	0.8 -2.1	0.8 -2.1	0.9 -2.1	0.9 -2.2	-1.3 -2.2						
Contribution from real exchange rate depreciation																			
Other identified debt-creating flows	-0.1 0.1	-0.1 0.1	0.0 0.1	-0.6 -0.3	0.0 0.0	-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	-0.2 -0.1	-0.4 -0.4					
Recognition of contingent liabilities (e.g., bank recapitalization)	0.0 -0.2	0.0 -0.2	0.0 -0.2	0.0 -0.2	0.0 0.0	35 30													
Debt relief (IMF and other)	0.0 0.0	20 15																	
Other debt creating or reducing flow (please specify)																			
Residual	2.3 -1.9	3.3 3.3	-0.6 -0.6	0.1 0.1	0.2 0.2	-0.1 -0.1	0.0 0.0	-0.1 -0.1	0.0 0.0	-0.1 -0.1	-1.3 -1.3	0.9 -0.1	-0.1 -0.1	10 5					
Sustainability indicators																			
PV of public debt-to-GDP ratio 2/																			
PV of public debt-to-revenue and grants ratio																			
Debt service-to-revenue and grants ratio 3/																			
Gross financing need 4/																			
Key macroeconomic and fiscal assumptions																			
Real GDP growth (in percent)	5.0 12	5.2 10	5.1 14	0.9 1.4	4.0 1.5	6.0 1.5	5.0 1.5	5.0 1.5	5.0 1.5	5.0 1.5	5.0 1.4	5.0 1.3	4.4 4.6						
Average nominal interest rate on external debt (in percent)	2.9 -11.1	5.0 6.0	2.7 1.7	3.9 1.7	4.7 1.7	5.0 1.7	5.1 1.7	4.9 1.7	5.1 1.7	5.0 1.7	5.0 1.7	5.0 1.7	0.6 4.9						
Average real interest rate on domestic debt (in percent)																			
Real exchange rate depreciation (in percent, + indicates depreciation)																			
Inflation rate (GDP deflator, in percent)	2.1 7.6	0.4 -7.0	2.5 18.7	1.8 18.8	1.7 -7.7	2.0 2.0	2.0 4.7	2.0 5.5	2.0 5.7	2.0 5.9	2.0 5.9	2.0 5.9	1.5 11.7	...					
Growth of real primary spending deflated by GDP deflator, in percent																			
Primary deficit that stabilizes the debt-to-GDP ratio 5/	2.0 0.0	2.1 0.0	-0.1 0.0	0.8 0.0	1.3 0.0	1.8 0.0	1.5 0.0	1.4 0.0	1.5 0.0	1.5 0.0	1.5 0.0	1.5 0.0	0.7 0.7	5.3 5.1					
PV of contingent liabilities (not included in public sector debt)	0.0 0.0	0.7 1.4																	

Sources: Country authorities; and staff estimates and projections.

1/ Coverage of debt: the central government. Definition of external debt is Currency-based.

2/ The underlying PV of external debt-to-GDP ratio reflects the public 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 (i.e., a primary surplus), which would stabilize 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. Mali: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2020–30**  
 (In percent)

	Projections 1/										
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>PV of debt-to-GDP ratio</b>											
<b>Baseline</b>	21	20	19	18	17	17	16	15	15	14	14
<b>A. Alternative Scenarios</b>											
A1. Key variables at their historical averages in 2020–2030 2/	21	21	20	18	16	15	12	8	4	-1	-7
<b>B. Bound Tests</b>											
B1. Real GDP growth	21	21	21	19	18	18	17	17	16	15	15
B2. Primary balance	21	21	20	19	18	17	17	16	16	15	15
B3. Exports	21	22	24	23	22	21	20	19	19	18	17
B4. Other flows 3/	21	23	24	23	22	21	20	20	19	18	17
B5. Depreciation	21	26	21	20	18	18	17	16	16	16	15
B6. Combination of B1–B5	21	25	24	23	22	21	20	19	19	18	17
<b>C. Tailored Tests</b>											
C1. Combined contingent liabilities	21	22	21	20	19	19	18	18	17	17	17
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	21	21	20	19	18	18	17	16	15	15	14
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.
<b>Threshold</b>	40	40	40	40	40	40	40	40	40	40	40
<b>PV of debt-to-exports ratio</b>											
<b>Baseline</b>	85	80	78	75	72	71	70	70	70	70	70
<b>A. Alternative Scenarios</b>											
A1. Key variables at their historical averages in 2020–2030 2/	85	84	82	76	69	62	52	37	17	-7	-36
<b>B. Bound Tests</b>											
B1. Real GDP growth	85	80	78	75	72	71	70	70	70	70	70
B2. Primary balance	85	81	80	77	74	74	74	74	74	74	75
B3. Exports	85	100	118	114	110	109	108	107	106	105	104
B4. Other flows 3/	85	90	99	95	91	91	90	89	88	87	86
B5. Depreciation	85	80	68	64	61	61	60	60	60	61	61
B6. Combination of B1–B5	85	99	90	97	93	92	91	90	89	89	88
<b>C. Tailored Tests</b>											
C1. Combined contingent liabilities	85	85	84	81	79	80	80	81	82	83	84
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	85	85	85	81	77	76	74	73	72	72	71
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.
<b>Threshold</b>	180	180	180	180	180	180	180	180	180	180	180
<b>Debt service-to-exports ratio</b>											
<b>Baseline</b>	7	7	7	7	7	5	6	6	6	6	6
<b>A. Alternative Scenarios</b>											
A1. Key variables at their historical averages in 2020–2030 2/	7	7	8	7	7	6	6	7	6	5	5
<b>B. Bound Tests</b>											
B1. Real GDP growth	7	7	7	7	7	5	6	6	6	6	6
B2. Primary balance	7	7	7	7	7	5	6	6	6	6	6
B3. Exports	7	8	9	9	9	7	8	9	9	9	9
B4. Other flows 3/	7	7	7	7	7	6	6	7	8	8	8
B5. Depreciation	7	7	7	7	6	5	6	5	5	5	5
B6. Combination of B1–B5	7	7	8	8	8	6	7	8	8	8	8
<b>C. Tailored Tests</b>											
C1. Combined contingent liabilities	7	7	7	7	7	5	6	6	6	6	6
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	7	7	8	7	7	6	6	7	7	6	6
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.
<b>Threshold</b>	15	15	15	15	15	15	15	15	15	15	15
<b>Debt service-to-revenue ratio</b>											
<b>Baseline</b>	9	9	10	9	9	7	7	7	7	6	6
<b>A. Alternative Scenarios</b>											
A1. Key variables at their historical averages in 2020–2030 2/	9	9	10	9	9	7	7	7	7	6	5
<b>B. Bound Tests</b>											
B1. Real GDP growth	9	9	10	10	9	7	8	8	7	7	7
B2. Primary balance	9	9	10	9	9	7	7	7	7	7	6
B3. Exports	9	9	10	10	9	7	8	8	8	8	8
B4. Other flows 3/	9	9	10	10	9	7	8	8	8	8	8
B5. Depreciation	9	11	12	11	10	8	9	9	7	7	7
B6. Combination of B1–B5	9	10	11	10	10	8	8	9	8	8	8
<b>C. Tailored Tests</b>											
C1. Combined contingent liabilities	9	9	10	9	9	7	7	7	7	7	6
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	9	9	10	10	9	7	7	7	7	7	7
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.
<b>Threshold</b>	18	18	18	18	18	18	18	18	18	18	18

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. Mali: Sensitivity Analysis for Key Indicators of Public Debt, 2020–30**

	Projections 1/										
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>PV of Debt-to-GDP Ratio</b>											
<b>Baseline</b>	35	36	36	36	37	37	37	37	38	38	38
<b>A. Alternative Scenarios</b>											
A1. Key variables at their historical averages in 2020–2030 2/	35	35	36	37	37	38	38	39	39	40	41
<b>B. Bound Tests</b>											
B1. Real GDP growth	35	38	41	42	44	45	47	48	49	51	52
B2. Primary balance	35	37	39	39	39	39	40	40	40	40	40
B3. Exports	35	38	41	41	41	41	41	41	41	41	41
B4. Other flows 3/	35	38	41	41	41	42	42	42	41	42	42
B5. Depreciation	35	40	38	37	36	35	34	33	32	32	31
B6. Combination of B1–B5	35	36	36	36	36	36	36	36	37	37	37
<b>C. Tailored Tests</b>											
C1. Combined contingent liabilities	35	43	43	43	44	44	44	44	44	44	44
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	35	37	39	42	44	46	48	49	51	52	54
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.
<b>TOTAL public debt benchmark</b>	55	55	55	55	55	55	55	55	55	55	55
<b>PV of Debt-to-Revenue Ratio</b>											
<b>Baseline</b>	168	167	174	176	177	178	179	179	179	180	180
<b>A. Alternative Scenarios</b>											
A1. Key variables at their historical averages in 2020–2030 2/	168	165	175	178	181	184	186	187	189	190	192
<b>B. Bound Tests</b>											
B1. Real GDP growth	168	176	196	203	210	217	223	229	234	239	244
B2. Primary balance	168	173	188	189	189	191	190	190	190	190	190
B3. Exports	168	176	197	198	197	199	198	197	196	195	194
B4. Other flows 3/	168	179	199	200	199	200	200	199	197	197	195
B5. Depreciation	168	188	186	181	175	172	166	161	156	151	147
B6. Combination of B1–B5	168	167	176	174	174	175	174	174	174	175	175
<b>C. Tailored Tests</b>											
C1. Combined contingent liabilities	168	203	210	211	210	210	210	209	208	207	206
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	168	179	197	210	218	227	232	236	241	247	252
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.
<b>Debt Service-to-Revenue Ratio</b>											
<b>Baseline</b>	30	35	42	43	46	46	48	50	50	51	52
<b>A. Alternative Scenarios</b>											
A1. Key variables at their historical averages in 2020–2030 2/	30	34	41	43	47	47	49	52	53	54	55
<b>B. Bound Tests</b>											
B1. Real GDP growth	30	36	46	49	54	56	60	64	66	68	71
B2. Primary balance	30	35	44	47	50	50	52	53	53	54	55
B3. Exports	30	35	42	43	47	46	48	51	52	52	53
B4. Other flows 3/	30	35	42	43	47	46	48	51	52	52	53
B5. Depreciation	30	34	42	41	45	44	46	48	48	48	49
B6. Combination of B1–B5	30	34	41	43	46	46	48	49	49	50	51
<b>C. Tailored Tests</b>											
C1. Combined contingent liabilities	30	35	54	54	58	59	57	59	59	59	59
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	30	36	45	49	55	58	62	66	68	70	73
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.