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RWANDA

Joint World Bank -IMF Debt Sustainability Analysis[1]

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and the International Monetary Fund (IMF)

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Rwanda: Joint Bank-Fund Debt Sustainability Analysis

Risk of external debt distress	Low
Overall risk of debt distress	Low
Application of judgment	No

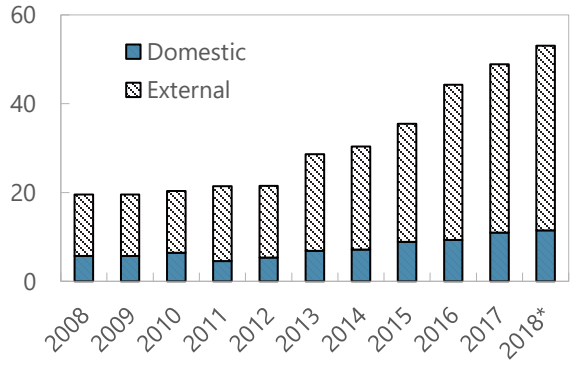
An updated joint assessment of Rwanda's debt sustainability suggests continued low risk of external debt distress. External debt burden indicators remain below risk thresholds, except for a short and temporary breach of debt service indicators in 2023, when the Eurobond issued in 2013 matures. The main risk to debt sustainability—and macroeconomic stability—remains external shocks. Balancing Rwanda's still-strong public investment needs with maintaining low risks of debt distress, the government is focused on carefully choosing the highest return projects, financed under the most favorable terms. These principles are laid out in Rwanda's Medium-Term Debt Strategy, as are options for help mitigating potential risks. More broadly, the government is focused on creating a larger and more diversified export base while encouraging more private investment, to help secure high and resilient growth over the long term. Forthcoming results of fiscal risk analysis will help identify if there could be additional contingent liabilities that should be included in the next DSA.

[1] This debt sustainability analysis was conducted using the Joint Bank-Fund Debt Sustainability Framework for Low-Income Countries (LIC-DSF) that was approved in 2017. The fiscal year for Rwanda is from July–June; however, this DSA is prepared on a calendar year basis.

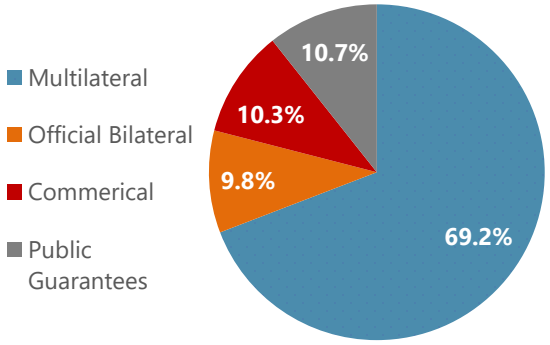
BACKGROUND

1. Rwanda's public and publicly-guaranteed debt has increased, including to support investment scaling up envisaged under the recently completed 2013–18 program supported by the Policy Support Instrument, while maintaining a low risk of debt distress. During that period, guarantees were issued and borrowing undertaken to support a large scaling up of public investment projects to support trade and tourism. These include three large-scale projects which are being completed through a series of PPPs and external guarantees, totaling US$465 million at end-2018.[2] As a result, nominal public and publicly guaranteed (PPG) external debt has risen from 21.8 percent at end-2013 to 41.6 percent in 2018 (Text Figure 1).[3] The debt continues to be dominated by multilateral lending (Text Figure 2), resulting in a PV of PPG external debt-to-GDP ratio of 29.0 in 2018. Total nominal public debt stood at 53.1 percent of GDP in 2018, which is similar to previous DSA projections. External debt remains about two-thirds on concessional terms. The yield on the outstanding Eurobond has fallen to around 5.8 percent in early-2019, while rates on domestic T-bills and T-bonds range from 5.5 percent (28 days) to 12.9 percent (15 years).

Text Figure 1. Nominal Public Debt (Percent of GDP)



Text Figure 2. Composition of Nominal PPG External Debt (2018*, Percent of total)



* Preliminary data for 2018

Source: Rwandan authorities and IMF Staff Calculations

2. The DSA covers the central government, guarantees, and state-owned enterprises (Text Table 1). The Ministry of Finance and Economic Planning publishes annual debt data, covering domestic and external debt of the central government, broken down by multilateral, bilateral and commercial debt, as well as information on guarantees and debt held by all state-owned enterprises (SOEs). There is no

[2] These projects include: the construction of the Kigali Convention Center (KCC) completed in 2016 (US$130 million); the expansion of the national airline, RwandAir, including increasing in the size of the fleet (US$169 million debt outstanding at end-2018; US$86million in aircraft leases at end-2018); and the construction of a new airport in the Bugesera district of southeastern Rwanda (US$80 million).

[3] Preliminary data for 2018.

debt stemming from extra budgetary funds, long term central bank financing of the government, nor the state-owned social security fund. External debt is defined on a currency-basis.

Text Table 1. Rwanda: Coverage of Public and Publicly Guaranteed Debt and Parameters for Contingent Liability Shocks for the Tailored Stress Test

	Subsectors of the Public Sector	Check Box
1	Central Government	X
2	State and Local Government	
3	Other Elements in the General Government 1/	X
4	o/w: Social Security Fund	X
5	o/w: Extra Budgetary Funds (EBFs)	X
6	Guarantees (to Other Entities in the Public and Private Sector, Including to SOEs)	X
7	Central Bank (Borrowed on Behalf of the Government) 2/	X
8	Non-Guaranteed SOE Debt	X

1	The Country's Coverage of Public Debt	The Central Government plus Social Security and Extra Budgetary Funds, Central Bank, Government-Guaranteed Debt, Non-Guaranteed SOE Debt			
		Default		Used for the Analysis	Reasons for Deviations from Default Settings
2	Other Elements of the General Government not Captured in 1.	0	percent of GDP	0	
3	SOE's Debt (Guaranteed and not Guaranteed by the Government) 3/	2	percent of GDP	0	SOE debt fully captured.
4	PPP 4/	35	percent of PPP stock	0	
5	Financial Market (the Default Value of 5 Percent of GDP is the Minimum Value)	5	percent of GDP	5	
	Total (2+3+4+5) (in Percent of GDP)	5.0			

1/ The state-owned social security fund (Rwanda Social Security Board, RSSB) has no outstanding debt and there are no extra-budgetary funds (EBFs).
2/ There is no short-term financing from the central bank (BNR) to the government.
3/ The default shock of 2 percent of GDP will be triggered for countries whose government-guaranteed debt is not fully captured under the country's public debt definition (1.). If it is already included in the government debt (1.) and risks associated with SoE's debt not guaranteed by the government is assessed to be negligible, a country team may reduce this to 0 percent.
4/ When PPP stock is less than 3 percent of GDP, as reflected in the World Bank's database, then test is set to zero. Rwanda's PPP stock is shown as 2 percent of GDP.

Source: Rwandan authorities and World Bank's Private Participation in Infrastructure Database.

UNDERLYING ASSUMPTIONS

3. The DSA assumes the adoption of a new fiscal framework, consisting of a debt ceiling anchor and an operational deficit ceiling. The fiscal framework would: (i) maintain the East African Community 50 percent PV of debt to GDP ceiling as a fiscal anchor; and (ii) introduce an operational rule with deficit to GDP ceiling of 5.5 percent for the budgetary central government (BCG) over a 5-year rolling window[4]. The BCG deficit ceiling is well below that needed to keep the PV of debt below the ceiling; this is to provide a buffer for unanticipated developments and debt contracted or guaranteed outside the BCG. The fiscal framework is designed to support spending for implementation of Rwanda's National Transformation Strategy (NST), while providing operational guidance and maintaining debt at a sustainable level. As a result, the gross borrowing needs of the public sector have been increased over the DSA horizon, with an assumption that the majority of additional financing would be accessed on concessional terms and used for investment spending (capital and labor). The main assumptions and projections for key macroeconomic variables are summarized in Box 1 and Text Table 2.

[4] See staff report for the 2019 Article IV consultation and request for a three-year Policy Coordination Instrument.

4. Despite higher growth in the near-term, the DSA takes a more conservative approach to long-run growth compared to previous DSAs. Growth is expected to be somewhat higher in the near term as compared to the previous DSA, given the assumption of higher investment spending and recent evidence of higher growth potential in agriculture and manufacturing. Over the next five years, the additional investment spending and large construction projects should sustain growth at almost 8.0 percent, before tapering off to around 6.5 percent in 20 years, consistent with an economy where population growth could slow over time. While the public sector is expected to remain the main driver of growth in the near term, the private sector is expected gradually to play a more import role in growth and job creation over time. The current account deficit is expected to remain around 7.5 percent over the medium term, and narrow modestly over the long term as exports in new lines expand (including horticulture, new minerals, and textiles).

Table 2. Key Macroeconomic and Debt Assumptions—Comparison with the Previous Debt Sustainability Analysis

Calendar year	2018	2019	2020	2021	2022	2025	2035	2038
				Projections				
Selected indicators from the macro-frame and debt data								
(Percent, unless otherwise indicated)								
				PV of PPG External Debt to GDP Ratio				
2018 DSA 9th Rev.	29.9	29.4	28.2	26.7	26.2	25.1	23.9	23.4
2019 DSA	29.0	29.4	29.6	29.4	29.6	31.1	33.8	34.4
				PV of Public Debt to GDP Ratio				
2018 DSA 9th Rev.	39.6	38.7	37.0	35.2	33.3	31.6	31.8	31.9
2019 DSA	41.1	42.5	42.9	42.7	41.6	40.9	45.1	46.7
				Grant Element of New External Borrowing				
2018 DSA 9th Rev.	48.9	48.6	41.8	40.2	40.9	39.7	30.8	28.2
2019 DSA	-	46.4	44.4	42.7	40.4	41.4	33.8	30.0
				New Commercial Loan Disbursements (billions of U.S. dollars)				
2018 DSA 9th Rev.	0.04	0.04	0.05	0.06	0.04	0.50	1.68	2.67
2019 DSA	0.04	0.00	0.00	0.00	0.00	0.41	1.07	1.83
				Real GDP Growth (annual percent change)				
2018 DSA 9th Rev.	7.2	7.8	8.0	7.5	7.5	7.5	7.5	7.5
2019 DSA	8.6	7.8	8.1	8.2	8.0	7.4	6.9	6.6
				Current Account Balance (percent of GDP)				
2018 DSA 9th Rev.	-10.0	-10.0	-9.0	-7.1	-7.1	-5.0	-5.4	-5.5
2019 DSA	-7.9	-9.6	-9.4	-7.9	-8.1	-7.7	-7.2	-7.1
				Exports of goods and services (percent of GDP)				
2018 DSA 9th Rev.	22.5	23.7	23.9	24.9	24.9	27.9	39.5	43.8
2019 DSA	21.4	21.2	21.4	22.1	22.1	23.7	29.4	31.7
				Fiscal balance (percent of GDP)				
2018 DSA 9th Rev.	-5.8	-4.1	-3.4	-2.7	-2.6	-3.2	-2.5	-2.5
2019 DSA	-4.7	-6.1	-6.4	-6.2	-5.1	-5.4	-5.3	-5.2

Sources: Rwandan authorities; IMF and World Bank staff estimates and projections.

5. The DSA assumes continued support from bilateral and multilateral development partners over the medium-term. The new fiscal framework should provide space to support NST implementation, while maintaining macroeconomic stability. Over the first 5 years of the DSA horizon, larger financing needs of the government are expected to be met by increased support from official bilateral and multilateral partners. From 2025 onwards, the financing mix is assumed to: (i) shift gradually away from concessional financing to market-based financing, as income levels rise, and (ii) shift from external to domestic financing, as the local bond markets develop.

6. The DSA also takes a conservative approach to financing mix (Text Table 3). The grant component of new external financing is assumed to decline as Rwanda develops. As a result, grant-equivalent external financing[5] declines from 71 percent of total external financing in 2019 to 58 percent in 2028 to 39 percent by 2039, while average effective real interest rates on domestic debt rise from 1.6 percent in 2009-18 to 3.4 percent in 2030–39.

Table 3. Financing Mix (2019–39)

	2019	2028	2039	Average	
				2019-28	2019-39
			(in percent)		
Grant equivalent financing[1]	71	58	39	61	54
Grant element in new disbursement	46	40	29	40	37
Grant ratio in budgetary ODA flows[2]	39	22	12	28	22
Grant ratio in ODA project finance flows[3]	56	41	25	49	40

Notes:

[1] In percent of external financing.

[2] Calculated as the ratio of budgetary grants in total budgetary grants and loans in budgetary central government.

[3] Calculated as the ratio of project grants in in total project grants and loans in budgetary central government.

Sources: Rwandan authorities; IMF and World Bank staff estimates and projections.

7. Rwanda's recent public investment drive has resulted in large accrual of public debt, but has been appropriately managed in order to keep debt risks low. A scaling up of public debt, among other things to finance large projects, was anticipated in the 2013 DSA, with Rwanda's debt sustainability assessed against different borrowing scenarios to determine the fiscal space available.[6] The actual pace of the scaling up of debt was larger than anticipated in the scaling up scenarios of the 2013 DSA. Faster exchange rate depreciation agreed under the PSI/SCF to correct external imbalances, and higher primary deficits, due to lower-than-assumed donor grants, were the main factors in the larger-than-expected accrual of debt (Figure 3).

[5] This includes grants provided directly to the government as well as the grant element of new borrowing (difference between the face value and the PV of new debt).

[6] See "Appendix II. Joint Bank-Fund Staff Debt Sustainability Analysis Update" of the Seventh the Seventh Review Under The Policy Support Instrument for Rwanda, December 2013: https://www.imf.org/external/pubs/ft/scr/2013/cr13372.pdf

Box 1. Macroeconomic Framework for the DSA

The medium- and long- term framework underpinning the DSA assumes that Rwanda continues to enjoy robust growth, with low and stable inflation. A limited growth dividend is implied from the broad public investment in infrastructure to support greater export diversification, and to improve agricultural productivity and resilience. Mobilizing the private sector as the main engine for growth and job creation will be critical, along with sustained levels of investment—consistent with the NST or meeting the MDGs—and increased human capital. Key highlights include:

Growth: The near-term growth outlook maintains growth around 8 percent through 2022, declining to 7.2 percent by 2028, and to 6.5 percent by 2039. Relative to previous DSAs, this is a slight upward revision to growth in the near term, but a more conservative growth projection over the medium- to long-term, consistent with an economy where population growth is slowing over time. Upside risks around the long-term growth potential of the economy exist, particularly from faster TFP growth.

External Sector: Exports of goods and services are expected to grow steadily (11 percent on average during 2019–39), roughly in line with historical rates, but below recent very rapid growth. This reflects, in part, strategic public investments and export promotion, and development plans. Import needs are expected to remain high, particularly in the near term as high public and private investment rates are maintained, declining slightly over the medium term. Consequently, while Rwanda's current account is projected to remain in deficit, it is expected to narrow somewhat over the DSA horizon, reaching 7 percent by 2039.

Inflation: Inflation is expected to remain at the authorities' medium-term target of 5 percent over the medium- to long- run.

Reserves: Reserve coverage is expected to remain in the range of 4–5 months of prospective imports over
2020–22 and remain above 4.5 months of imports in the outer years.

Domestic Revenue Mobilization. There is assumed to be a gradual rise in domestic revenues, from 19.3 percent in 2018 to 22.3 percent by 2039, reflecting tax revenue measures already in the pipeline (e.g. fixed asset taxes, electronic billing machines), as well as additional measures agreed under the new program (e.g. tax expenditure analysis aimed to streamline incentives, additional administrative measures.

Grants. The DSA assumes a tapering of external assistance from development partners over the projection period. Grants decline steadily from 4.9 percent of GDP in 2018 to 2.3 percent by 2029, and 1.1 percent by 2039.

Public Spending and Deficit: The fiscal deficit is assumed to average slightly below the 5.5 percent of GDP ceiling over the duration of the forecast horizon, resulting in higher gross borrowing needs of the public sector as compared to previous DSAs.

External borrowing. The assumptions for new external borrowing vary over the assessment period. With development of local bond markets and some improvement in the current account position, reliance on external borrowing is expected to moderate. Compositionally, from 2019-2022, the framework assumes higher public borrowing needs, which are met by increased disbursements of external multilateral and bilateral debt. From 2022 onward, the framework assumes that such needs will be financed with a progressively larger share of non-concessional borrowing. The share of external financing relative to total financing declines from around 61 percent in 2019 to 55 percent by 2029 and remains at around 55 percent thereafter. The Eurobond is assumed to be rolled over in 2023, and again in 2033, at an interest rate of 7 percent and a maturity of 10 years.

Domestic borrowing. The framework assumes that, over the medium- to long-term, net domestic borrowing will increase with a gradual lengthening of maturities, as Rwanda intensifies efforts to

develop the domestic bond market. New domestic borrowing is expected to be contracted at an average nominal interest rate of 7.9 percent over the next five years, rising gradually to 8.3 percent in the long run as the government shifts to longer maturities.

Foreign Direct Investment. The framework assumes an increase in FDI, driven by the NST, the Compact with Africa, and other efforts to provide incentives to attract foreign direct investment. FDI increases from 3 percent of GDP in 2018 to 4.5 percent by 2039.

8. Realism tests illustrate the near-term growth contribution of higher investment spending for the NST and agricultural productivity (Figure 4). Compared to the previous DSA, the primary fiscal deficit is 2.0 percentage points of GDP higher in 2022, reflecting higher investment spending. The addition to growth is less than would be implied by the additional fiscal impulse. This DSA assumes an unchanged direct growth contribution from the construction of Bugesera airport. Compared to the previous DSA, there is more public investment which has a direct impact on growth.[7]

9. Rwanda's debt carrying capacity is assessed as "strong"[8] (Text Tables 4a and b). The composite index (CI) for Rwanda, which measures the debt carrying capacity in the new LIC-DSF, stands at 3.24, above the cut-off value of 3.05 for strong capacity countries. Underlying inputs for the calculation of the CI were sourced from the IMF's October 2018 WEO, and an update of the World Bank Country Policy and Institutional Assessment (CPIA) to 2017 levels. The CI score is driven largely by Rwanda's high CPIA score and adequate reserve coverage.[9] The government's medium-term debt strategy (MTDS) for FY18/19–FY20/21 examines various potential risks to debt sustainability, including rolling over the Eurobond in 2023. For contingency planning should potential risk scenarios materialize, the MTDS outlines several alternative debt management strategies. Overall, risks to debt sustainability are mitigated by a large average time-to-maturity for the entire portfolio of 12 years, reflecting the large share of concessional external borrowing and the increasing average maturity of domestic debt, as well as the relatively small size of the Eurobond. The MTDS underscores the importance of maintaining a low risk of debt distress in order to maintain concessional financing windows by several development partners, and that non-concessional borrowing will be contracted only on an exceptional basis, cognizant of debt limits in the IMF-supported program and based on a careful consideration of the economic rate of return of proposed projects.

[7] The Bugesera effect is calculated by applying a fiscal multiplier of 0.3 to the total value of the Bugesera Project (US$397.5 million) over the 3-year life of the project (2019–21), as a share of cumulative GDP.
[8] This is unchanged from the assessment in the previous DSA, under the old methodology.
[9] This is based on the IMF's ARA metric for Rwanda's reserve coverage.

Table 4a. Rwanda: Debt Carrying Capacity

Components	Coefficients (A)	10-year average values (B)	CI Score components (A*B) = (C)	Contribution of components
CPIA	0.38	4.03	1.55	48%
Real growth rate (in percent)	2.72	7.13	0.19	6%
Import coverage of reserves (in percent)	4.05	36.26	1.47	46%
Import coverage of reserves^2 (in percent)	-3.99	13.15	-0.52	-16%
Remittances (in percent)	2.02	1.89	0.04	1%
World economic growth (in percent)	13.52	3.58	0.48	15%
CI Score			3.21	100%
CI rating			Strong	

Table 4b. Rwanda: Applicable Thresholds, and Benchmarks

EXTERNAL debt burden thresholds	Weak	Medium	Strong
PV of debt in % of			
Exports	140	180	240
GDP	30	40	55
Debt service in % of			
Exports	10	15	21
Revenue	14	18	23

TOTAL public debt benchmark	Weak	Medium	Strong
PV of total public debt in percent of GDP	35	55	70

DEBT SUSTAINABILITY ANALYSIS

External Debt

10. Rwanda's external debt stock indicators remain below the threshold under the baseline and all stress scenarios. The higher investment spending provided for under the revised framework is expected to lead to a gradual accumulation of PPG external debt over time, with the present value (PV) of debt peaking at 34.6 percent of GDP in 2039 (Table 1). The PV of external debt-to GDP (PVDY) and the PV of external debt-to-exports (PVDE) remain well below their respective thresholds of 55 and 240 percent, respectively, throughout the projection period and under all the standardized shocks (Figure 1).[10] The PVDY rises gradually to 33.0 percent by 2029, while the PVDE ratio declines to 126.2 percent

[10] The new LIC-DSF, similar to the previous one, assesses the risk of debt distress by observing the evolution of selected indicators against predetermined thresholds that are set according to countries' debt carrying capacities. The indicators are identical to those in the previous LIC-DSF, with the exception of the PV of debt-to-government revenues (PVDR), which is no longer used. This was dropped as it was found to add no new information in the process of determining the risk of debt distress. See joint IMF / World Bank Paper on Review of the Debt Sustainability Framework for Low Income Countries: Proposed Reforms, October 2017.

(Table 3), consistent with the NST strategy for more export diversification and job creation in the tradable sector. The most severe shocks are the export (for the PVDE) and combination shocks (for the PVDY).

11. The historical scenario increases sharply as a result of the sharp adjustment of external balances over the period 2015–17 (Table 3). The PVDY and PVDE ratios both rise sharply and continuously under the historical scenario. This is due primarily to the large current account deficit and negative GDP deflator calibrated using historical averages, which covered a period including several large shocks (donor withdrawal, commodity prices, and drought) as well as large external imbalances, which were corrected over the 2015-17, primarily through a large exchange rate adjustment, as envisaged under the PSI/SCF-supported program. After the large exchange rate adjustment, the real exchange rate is now well aligned with fundamentals and the government is committed to maintaining that alignment to preserve external sustainability. The large current account deficit and negative GDP deflator account for almost all of the divergence between the baseline and historical scenarios in these stock indicators.

12. The standardized stress tests confirm that risks related to the debt service burden and market financing are low (Figure 1). The servicing spike in external debt service in 2023 (due to rolling over the Eurobond) causes breaches to both the debt service-to-exports (DSE) ratio and the debt service-to-revenue (DSR) ratio under the stress tests (and baseline).[11] The breaches are temporary in nature (lasting one year), and thus, according to the LIC DSF guidance note, are assumed not to affect the risk rating.[12] The standardized shock to gross market financing needs (Figure 5) does not materially alter the debt indicators.

13. Customized alternate scenarios suggest that these results are robust to a variety of other financing conditions, although concessional financing remains an important element of the authorities' medium-term debt strategy. The external debt indicators are reproduced under two customized alternate scenarios, which effectively constitute additional stress testing (Figure 6). The first scenario assumes that the Rwandan government is required to take on the full financial liability for Bugesera airport in 2023. The second scenario assumes that all additional borrowing required by the proposed fiscal framework is contracted on commercial Eurobond terms, assuming a maturity of 10 years and an interest rate of 7 percent, compared to 5.8 percent currently. Under both alternate scenarios, the external debt stock indicators remain well below their respective thresholds, while the debt service indicators show the same one period breach as before.

Public Debt

14. Public debt remains significantly below the LIC DSA benchmark of 70 percent (in PV terms) for countries with strong debt carrying capacity (Table 2 and 4a and b, Figure 2). The evolution of the both the stock and service indicators for public debt follows broadly that of external debt. Public debt remains sustainable even under the most extreme shocks scenarios (real GDP growth and export growth shocks). The PV of public debt-to-revenue ratio (PVDR) remains broadly stable despite a

[11] The new LIC DSF framework has lowered the threshold for the external debt service-to-exports (DSE) ratio from 25 to 21, which partly contributes to the one-period breach in this indicator.

[12] The DSA focuses on gross debt flows. With expectations that the Eurobond will be rolled over, there is a spike down in the grant element of new borrowing in 2023, and no anticipated net effect on the debt stock.

steady real decline in grants (which are included in the ratio). The debt service-to-revenue (DSR) ratio increases steadily over the forecast horizon, due to a greater reliance on domestic debt.

ASSESSMENT

15. Rwanda's debt is assessed to be sustainable with continued low risk of debt distress. The risk of PPG external debt distress in Rwanda is low, and public debt remains well below its benchmark. A temporary breach in the debt service ratios reflects refinancing of the Eurobond. Given the relatively small size of the Eurobond and the low sovereign risk premium, the rollover risks are limited. A forthcoming Fiscal Transparency Evaluation and subsequent fiscal risk analysis will help evaluate whether there could be additional contingent liabilities not captured in this analysis.

16. The main risks to debt sustainability, and indeed the overall macroeconomic outlook continue to be external shocks. The baseline scenario assumes Rwanda continues to achieve robust growth over the medium and long term, while concessional financing is expected to decline gradually. Main risks to this outlook are external shocks to growth and/or exports, lower-than-expected concessional financing, and worse-than-expected external financing conditions. A series of stress tests conducted in this debt sustainability analysis, however, shows that these risks do not have a material impact on the overall assessment of Rwanda's debt sustainability.

Authorities' Views

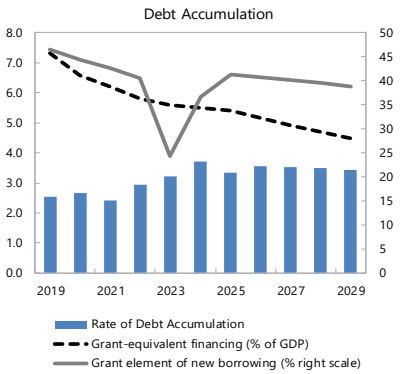
17. The government is in broad agreement with the DSF results on Rwanda's debt portfolio. Rwanda's risk of debt distress remains low, and the government intends to keep the status unchanged through a prudent borrowing strategy. The government will maximize concessional loans to avoid pressure on its debt repayment profile which shows a temporary breach in 2023 due to the repayment of the Eurobond. The medium-term debt strategy will also be characterized by a domestic debt issuance plan which will continue to play an essential role in domestic capital development.

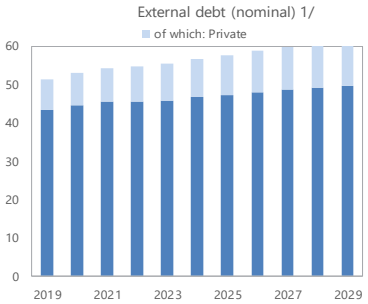
Table 1. Rwanda: External Debt Sustainability Framework, Baseline Scenario, 2016–39

(In percent of GDP, unless otherwise indicated)

	Actual			Projections								Average 8/	
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2029	2039	Historical	Projections
External debt (nominal) 1/	**43.8**	**46.4**	**50.0**	**51.3**	**53.0**	**54.3**	**54.8**	**55.3**	**56.6**	**61.8**	**69.9**	**29.6**	**56.7**
of which: public and publicly guaranteed (PPG)	**35.0**	**37.9**	**41.6**	**43.4**	**44.6**	**45.5**	**45.6**	**45.8**	**46.7**	**49.6**	**50.7**	**24.7**	**46.8**
Change in external debt	14.0	2.6	3.6	1.3	1.7	1.3	0.5	0.6	1.2	0.9	1.0		
Identified net debt-creating flows	**12.7**	**1.8**	**3.0**	**3.0**	**2.7**	**1.8**	**2.3**	**1.8**	**1.5**	**0.2**	**-1.6**	**5.5**	**1.6**
Non-interest current account deficit	**14.6**	**6.4**	**6.4**	**8.1**	**8.0**	**6.6**	**6.7**	**6.1**	**6.0**	**5.9**	**4.8**	**8.8**	**6.5**
Deficit in balance of goods and services	18.5	10.8	11.2	12.4	11.4	9.6	9.8	9.1	8.7	7.3	5.4	**16.0**	**9.2**
Exports	18.1	21.7	21.4	21.2	21.4	22.1	22.1	22.7	23.0	26.1	32.6		
Imports	36.6	32.5	32.7	33.6	32.8	31.8	32.0	31.7	31.7	33.4	38.0		
Net current transfers (negative = inflow)	-6.2	-6.5	-6.9	-6.7	-5.7	-5.3	-5.2	-4.8	-4.6	-3.8	-3.1	**-8.4**	**-4.8**
of which: official	-6.6	-6.6	-6.6	-6.5	-5.6	-5.0	-5.0	-4.5	-4.1	-2.6	-1.1		
Other current account flows (negative = net inflow)	2.3	2.1	2.1	2.3	2.3	2.2	2.1	1.8	1.9	2.4	2.6	**1.3**	**2.1**
Net FDI (negative = inflow)	**-2.6**	**-2.8**	**-3.0**	**-2.9**	**-2.8**	**-2.1**	**-1.8**	**-1.9**	**-2.1**	**-3.2**	**-4.5**	**-2.6**	**-2.5**
Endogenous debt dynamics 2/	**0.7**	**-1.8**	**-0.3**	**-2.2**	**-2.4**	**-2.6**	**-2.6**	**-2.5**	**-2.4**	**-2.4**	**-1.9**		
Contribution from nominal interest rate	1.3	1.4	1.5	1.4	1.4	1.4	1.4	1.3	1.4	1.6	2.2		
Contribution from real GDP growth	-1.7	-2.5	-3.8	-3.6	-3.8	-4.0	-4.0	-3.7	-3.8	-4.0	-4.1		
Contribution from price and exchange rate changes	1.1	-0.7	2.0	...	...	...	...	...	...	...	...		
Residual 3/	**1.3**	**0.8**	**0.6**	**-1.7**	**-1.1**	**-0.5**	**-1.8**	**-1.2**	**-0.3**	**0.7**	**2.6**	**-2.0**	**-0.5**
of which: exceptional financing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Sustainability indicators													
PV of PPG external debt-to-GDP ratio	**...**	**...**	**29.0**	**29.4**	**29.6**	**29.4**	**29.6**	**29.9**	**30.7**	**33.0**	**34.6**		
PV of PPG external debt-to-exports ratio	**...**	**...**	**135.2**	**138.4**	**138.0**	**132.9**	**133.6**	**132.1**	**133.4**	**126.2**	**106.1**		
PPG debt service-to-exports ratio	**6.3**	**7.2**	**7.8**	**9.0**	**10.5**	**13.0**	**8.4**	**19.3**	**7.2**	**7.0**	**11.3**		
PPG debt service-to-revenue ratio	**6.2**	**8.6**	**8.6**	**10.5**	**12.3**	**15.8**	**10.1**	**23.6**	**8.9**	**9.3**	**16.6**		
Gross external financing need (Billion of U.S. dollars)	1.2	0.6	0.6	0.9	1.0	1.1	1.1	1.5	1.2	1.7	4.4		
Key macroeconomic assumptions													
Real GDP growth (in percent)	6.0	6.1	8.6	7.8	8.1	8.2	8.0	7.5	7.5	7.2	6.5	**7.1**	**7.6**
GDP deflator in US dollar terms (change in percent)	-3.6	1.6	-4.2	-0.4	0.2	0.5	1.3	2.0	2.0	2.0	2.0	**-0.2**	**1.4**
Effective interest rate (percent) 4/	4.5	3.4	3.3	3.1	2.9	2.8	2.8	2.6	2.8	2.9	3.5	**3.1**	**2.8**
Growth of exports of G&S (US dollar terms, in percent)	4.4	29.0	3.0	6.2	9.3	12.4	9.3	12.3	11.3	11.6	11.6	**14.0**	**11.1**
Growth of imports of G&S (US dollar terms, in percent)	2.4	-4.4	4.8	10.5	5.6	5.4	10.0	8.8	9.4	9.9	10.7	**9.3**	**9.3**
Grant element of new public sector borrowing (in percent)	...	...	...	46.4	44.4	42.7	40.4	24.3	36.7	38.7	28.9	**...**	**39.6**
Government revenues (excluding grants, in percent of GDP)	18.4	18.1	19.3	18.3	18.2	18.2	18.4	18.6	18.8	19.7	22.3	**16.1**	**18.8**
Aid flows (in Billion of US dollars) 5/	0.7	0.8	1.1	0.9	0.8	0.9	0.8	0.8	0.9	1.3	2.1		
Grant-equivalent financing (in percent of GDP) 6/	...	...	...	7.3	6.6	6.2	5.8	5.6	5.5	4.5	3.1	**...**	**5.6**
Grant-equivalent financing (in percent of external financing) 6/	...	...	...	71.4	66.4	62.3	64.5	48.3	60.2	56.5	38.6	**...**	**61.0**
Nominal GDP (Billion of US dollars)	8	9	10	10	11	12	13	14	16	25	59		
Nominal dollar GDP growth	2.2	7.8	4.1	7.4	8.3	8.7	9.4	9.6	9.6	9.3	8.6	**6.9**	**9.1**
Memorandum items:													
PV of external debt 7/	...	...	37.4	37.3	37.9	38.2	38.7	39.4	40.6	45.2	53.8		
In percent of exports	...	...	174.2	175.9	177.1	172.5	175.0	174.1	176.4	173.0	165.1		
Total external debt service-to-exports ratio	12.7	13.2	15.4	16.6	17.5	20.1	15.9	26.9	15.0	15.4	21.9		
PV of PPG external debt (in Billion of US dollars)			2.8	3.0	3.3	3.5	3.9	4.3	4.9	8.2	20.3		
(PVt-PVt-1)/GDPt-1 (in percent)				2.5	2.7	2.4	2.9	3.2	3.7	3.4	3.1		
Non-interest current account deficit that stabilizes debt ratio	0.6	3.8	2.8	6.8	6.3	5.3	6.2	5.6	4.7	4.9	3.8		

Definition of external/domestic debt	Currency-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 - 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/ 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.

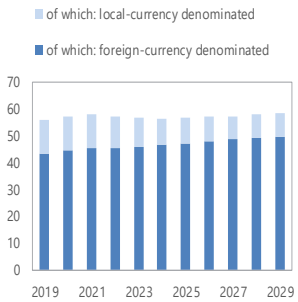
Table 2. Rwanda: Public Sector Debt Sustainability Framework, Baseline Scenario, 2016–39

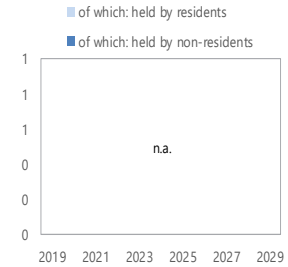
(In percent of GDP, unless otherwise indicated)

	Actual			Projections								Average 6/	
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2029	2039	Historical	Projections
Public sector debt 1/	**44.2**	**48.9**	**53.1**	**55.8**	**57.3**	**58.2**	**57.2**	**56.7**	**56.5**	**58.4**	**62.8**	**32.4**	**57.2**
of which: external debt	**35.0**	**37.9**	**41.6**	**43.4**	**44.6**	**45.5**	**45.6**	**45.8**	**46.7**	**49.6**	**50.7**	**24.7**	**46.8**
Change in public sector debt	8.8	4.6	4.2	2.7	1.5	0.9	-0.9	-0.6	-0.1	0.5	0.4		
Identified debt-creating flows	**2.3**	**0.4**	**2.9**	**2.7**	**1.6**	**1.1**	**-0.6**	**-0.4**	**0.0**	**0.4**	**0.4**	**1.3**	**0.6**
Primary deficit	**2.7**	**3.6**	**3.5**	**4.9**	**5.0**	**4.8**	**3.6**	**3.6**	**4.1**	**4.3**	**3.8**	**2.6**	**4.3**
Revenue and grants	23.5	22.9	24.1	23.1	22.2	21.6	22.0	22.2	22.1	22.0	23.4	**24.0**	**22.1**
of which: grants	5.1	4.7	4.9	4.8	3.9	3.4	3.6	3.7	3.4	2.3	1.1		
Primary (noninterest) expenditure	26.2	26.5	27.6	28.0	27.2	26.4	25.6	25.8	26.3	26.3	27.2	**26.6**	**26.5**
Automatic debt dynamics	**-0.4**	**-3.1**	**-0.6**	**-2.3**	**-3.4**	**-3.7**	**-4.3**	**-4.0**	**-3.9**	**-3.8**	**-3.4**		
Contribution from interest rate/growth differential	-1.7	-2.2	-3.0	-3.5	-4.1	-4.2	-4.2	-4.0	-3.9	-3.8	-3.5		
of which: contribution from average real interest rate	0.3	0.4	0.8	0.4	0.1	0.1	0.1	0.0	0.1	0.0	0.4		
of which: contribution from real GDP growth	-2.0	-2.6	-3.9	-3.8	-4.2	-4.3	-4.3	-4.0	-4.0	-3.9	-3.8		
Contribution from real exchange rate depreciation	1.3	-1.0	2.4	...	...	...	...	...	...	...	...		
Other identified debt-creating flows	**0.0**	**-0.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**-0.2**	**0.0**	**0.0**	**-0.1**	**-0.1**
Privatization receipts (negative)	0.0	-0.1	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 (use of earmarked fund)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.2	0.0	0.0		
Residual	**6.4**	**4.2**	**1.3**	**1.3**	**0.6**	**0.3**	**-0.3**	**-0.2**	**-0.2**	**0.1**	**0.1**	**2.1**	**0.1**
Sustainability indicators													
PV of public debt-to-GDP ratio 2/	**...**	**...**	**41.1**	**42.5**	**42.9**	**42.7**	**41.6**	**41.2**	**41.0**	**42.2**	**47.2**		
PV of public debt-to-revenue and grants ratio	**...**	**...**	**170.2**	**184.3**	**193.7**	**197.6**	**189.0**	**185.4**	**185.0**	**191.6**	**201.8**		
Debt service-to-revenue and grants ratio 3/	**28.6**	**29.3**	**29.5**	**17.5**	**23.1**	**32.1**	**30.7**	**39.5**	**27.5**	**26.8**	**34.1**		
Gross financing need 4/	8.4	9.0	10.6	9.0	10.1	11.7	10.4	12.4	10.0	10.2	11.8		
Key macroeconomic and fiscal assumptions													
Real GDP growth (in percent)	6.0	6.1	8.6	7.8	8.1	8.2	8.0	7.5	7.5	7.2	6.5	**7.1**	**7.6**
Average nominal interest rate on external debt (in percent)	2.2	2.5	2.3	2.2	2.1	1.9	1.8	1.5	1.7	1.7	1.8	**1.8**	**1.8**
Average real interest rate on domestic debt (in percent)	0.4	-0.8	7.2	4.2	0.9	1.0	1.1	1.7	1.7	2.3	3.9	**1.6**	**2.0**
Real exchange rate depreciation (in percent, + indicates depreciation)	5.1	-2.9	6.9	...	...	...	...	...	...	...	...	**1.9**	**...**
Inflation rate (GDP deflator, in percent)	5.5	7.3	-0.8	4.2	5.0	5.0	5.0	5.0	5.0	5.0	5.0	**4.4**	**5.0**
Growth of real primary spending (deflated by GDP deflator, in percent)	-2.1	7.3	13.2	9.3	5.0	5.2	4.7	8.4	9.2	7.4	7.2	**8.9**	**7.1**
Primary deficit that stabilizes the debt-to-GDP ratio 5/	-6.0	-1.0	-0.7	2.2	3.5	3.9	4.6	4.2	4.3	3.8	3.4	**-2.6**	**3.8**
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	**Currency-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 plus social security and extra budgetary funds, central bank, government-guaranteed debt, non-guaranteed SOE debt. Definition of external debt is Currency-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.

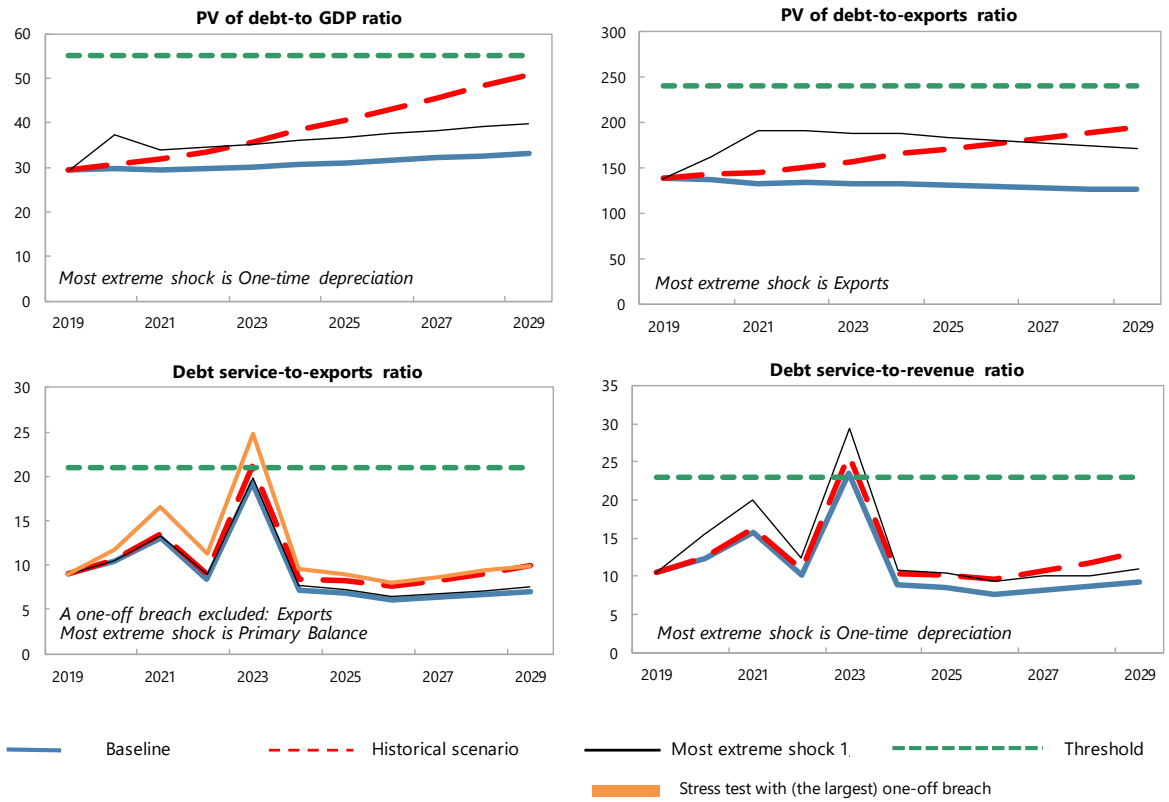
3/ Debt service is defined as the sum of interest and amortization of medium and long-term, and short-term debt.

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.

Figure 1. Rwanda: Indicators of Public and Publicly Guaranteed External Debt Under Alternative Scenarios, 2019–29 [1/ 2/]



Customization of Default Settings	Size	Interactions
Tailored Tests		
Combined CLs	Yes	
Natural Disasters	n.a.	n.a.
Commodity Prices [2/]	n.a.	n.a.
Market Financing	No	No

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 for 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	1.8%	1.8%
USD Discount rate	5.0%	5.0%
Avg. maturity (incl. grace period)	29	29
Avg. grace period	6	6

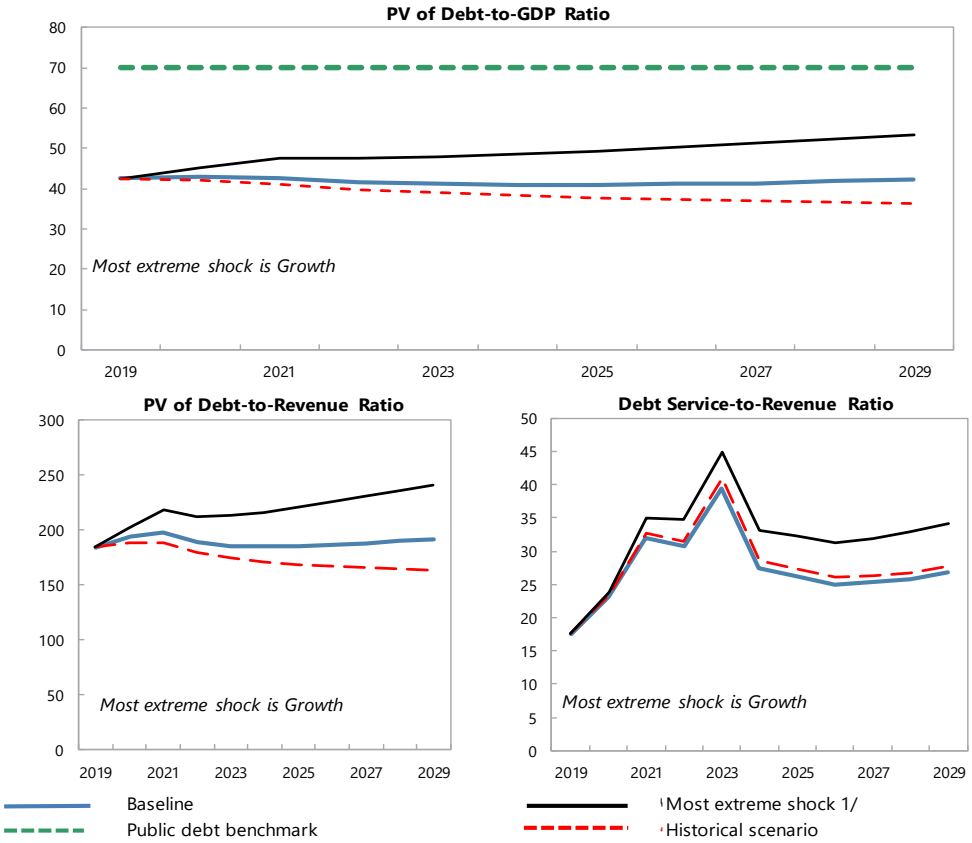
* Note: All the additional financing needs generated by the shocks under the stress tests are assumed to be covered by PPG external MLT debt in the external DSA. Default terms of marginal debt are based on baseline 10-year projections.

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 2029. Stress tests with one-off breaches are also presented (if any), while these one-off breaches are 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. Rwanda: Indicators of Public Debt Under Alternative Scenarios, 2019–29 1/



Borrowing Assumptions for Stress Tests*	Default	User defined
Shares of marginal debt		
External PPG medium and long-term	58%	58%
Domestic medium and long-term	15%	15%
Domestic short-term	27%	27%
Terms of marginal debt		
External MLT debt		
Avg. nominal interest rate on new borrowing in USD	1.8%	1.8%
Avg. maturity (incl. grace period)	29	29
Avg. grace period	6	6
Domestic MLT debt		
Avg. real interest rate on new borrowing	5.5%	5.5%
Avg. maturity (incl. grace period)	3	3
Avg. grace period	2	2
Domestic short-term debt		
Avg. real interest rate	1%	1.0%

* 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 2029. 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.

Table 3. Rwanda: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2019–29

(In percent)

	Projections										
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
PV of debt-to GDP ratio											
Baseline	**29.4**	**29.6**	**29.4**	**29.6**	**29.9**	**30.7**	**31.1**	**31.6**	**32.1**	**32.6**	**33.0**
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2019-2039 1/	29.4	30.6	31.9	33.5	35.6	38.3	40.5	43.0	45.6	48.2	50.8
B. Bound Tests											
B1. Real GDP growth	29.4	30.7	31.8	31.9	32.3	33.1	33.6	34.2	34.7	35.2	35.6
B2. Primary balance	29.4	30.1	31.6	31.9	32.2	33.0	33.3	33.8	34.2	34.5	34.8
B3. Exports	29.4	31.2	33.8	33.8	33.9	34.5	34.7	35.1	35.4	35.5	35.6
B4. Other flows 2/	29.4	31.6	32.9	32.9	33.1	33.7	33.9	34.4	34.7	34.9	35.0
B6. One-time 30 percent nominal depreciation	29.4	37.4	34.0	34.4	35.0	36.1	36.7	37.5	38.3	39.1	39.8
B6. Combination of B1-B5	29.4	33.5	34.0	34.0	34.3	35.1	35.4	36.0	36.4	36.7	37.0
C. Tailored Tests											
C1. Combined contingent liabilities	29.4	31.4	31.7	31.9	32.3	33.1	33.4	33.9	34.4	34.7	35.0
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	29.4										
Threshold	**55**	**55**	**55**	**55**	**55**	**55**	**55**	**55**	**55**	**55**	**55**
PV of debt-to-exports ratio											
Baseline	**138.4**	**138.0**	**132.9**	**133.6**	**132.1**	**133.4**	**131.0**	**129.8**	**128.4**	**127.5**	**126.2**
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2019-2039 1/	138.4	142.7	144.3	151.2	157.2	166.6	170.9	176.7	182.3	188.4	194.5
B. Bound Tests											
B1. Real GDP growth	138.4	138.0	132.9	133.6	132.1	133.4	131.0	129.8	128.4	127.5	126.2
B2. Primary balance	138.4	140.8	143.0	144.0	142.1	143.2	140.3	138.5	136.5	134.9	133.1
B3. Exports	138.4	162.9	191.5	191.3	187.6	187.9	183.4	180.5	177.1	174.1	171.0
B4. Other flows 2/	138.4	147.5	148.8	148.8	146.1	146.5	143.1	141.0	138.5	136.3	134.1
B6. One-time 30 percent nominal depreciation	138.4	138.0	121.5	122.8	122.0	124.0	122.4	121.8	121.0	120.9	120.5
B6. Combination of B1-B5	138.4	156.2	140.6	157.6	155.2	156.2	153.0	151.2	148.8	147.1	145.2
C. Tailored Tests											
C1. Combined contingent liabilities	138.4	146.7	143.0	144.0	142.8	143.9	141.1	139.3	137.3	135.9	134.1
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	138.4										
Threshold	**240**	**240**	**240**	**240**	**240**	**240**	**240**	**240**	**240**	**240**	**240**
Debt service-to-exports ratio											
Baseline	**9.0**	**10.5**	**13.0**	**8.4**	**19.3**	**7.2**	**6.8**	**6.1**	**6.3**	**6.6**	**7.0**
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2019-2039 1/	9.0	10.6	13.5	9.1	21.2	8.4	8.2	7.6	8.3	9.1	9.9
B. Bound Tests											
B1. Real GDP growth	9.0	10.5	13.0	8.4	19.3	7.2	6.8	6.1	6.3	6.6	7.0
B2. Primary balance	9.0	10.5	13.2	8.9	19.8	7.7	7.2	6.4	6.7	7.1	7.5
B3. Exports	9.0	11.8	16.6	11.2	24.8	9.6	9.0	8.0	8.6	9.4	9.9
B4. Other flows 2/	9.0	10.5	13.2	8.8	19.7	7.6	7.1	6.3	6.9	7.3	7.7
B6. One-time 30 percent nominal depreciation	9.0	10.5	13.0	8.1	19.0	7.0	6.6	5.9	6.1	6.1	6.6
B6. Combination of B1-B5	9.0	11.1	14.8	9.6	21.8	8.3	7.8	6.9	7.5	7.8	8.2
C. Tailored Tests											
C1. Combined contingent liabilities	9.0	10.5	13.2	8.7	19.6	7.5	7.0	6.3	6.5	6.8	7.2
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											
Threshold	**21**	**21**	**21**	**21**	**21**	**21**	**21**	**21**	**21**	**21**	**21**
Debt service-to-revenue ratio											
Baseline	**10.5**	**12.3**	**15.8**	**10.1**	**23.6**	**8.9**	**8.5**	**7.7**	**8.2**	**8.7**	**9.3**
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2019-2039 1/	10.5	12.5	16.4	10.9	25.8		10.2	9.6	10.7	11.8	13.1
B. Bound Tests											
B1. Real GDP growth	10.5	12.8	17.1	11.0	25.5		9.2	8.3	8.8	9.4	10.1
B2. Primary balance	10.5	12.3	16.1	10.7	24.1		9.0	8.2	8.7	9.3	9.9
B3. Exports	10.5	12.3	16.1	10.8	24.2		9.0	8.1	8.9	9.9	10.4
B4. Other flows 2/	10.5	12.3	16.1	10.6	24.0		8.9	8.0	8.9	9.6	10.2
B6. One-time 30 percent nominal depreciation	10.5	15.6	20.0	12.4	29.4		10.4	9.4	10.1	10.1	11.0
B6. Combination of B1-B5	10.5	13.0	17.5	11.3	25.9		9.5	8.6	9.5	9.9	10.6
C. Tailored Tests											
C1. Combined contingent liabilities	10.5	12.3	16.0	10.4	23.9		8.8	8.0	8.4	8.9	9.6
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	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	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Threshold	**23**	**23**	**23**	**23**	**23**		**23**	**23**	**23**	**23**	**23**

Sources: Country authorities; and staff estimates and projections.

1/ 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.
2/ Includes official and private transfers and FDI.

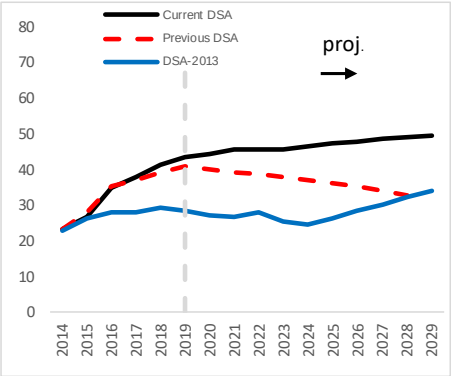
Table 4. Rwanda: Sensitivity Analysis for Key Indicators of Public Debt, 2019–29
(In percent)

	Projections										
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
PV of Debt-to-GDP Ratio											
Baseline	**42.5**	**42.9**	**42.7**	**41.6**	**41.2**	**41.0**	**40.9**	**41.1**	**41.4**	**41.8**	**42.2**
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2019-2039 1/	43	42	41	40	39	38	38	37	37	37	36
B. Bound Tests											
B1. Real GDP growth	43	45	48	47	48	48	49	50	51	52	54
B2. Primary balance	43	44	46	45	44	44	43	43	44	44	44
B3. Exports	43	44	47	46	45	45	44	45	45	45	45
B4. Other flows 2/	43	45	46	45	44	44	44	44	44	44	44
B6. One-time 30 percent nominal depreciation	43	48	45	42	40	38	37	36	35	35	34
B6. Combination of B1-B5	43	42	44	42	42	42	41	41	42	42	42
C. Tailored Tests											
C1. Combined contingent liabilities	43	47	46	45	44	44	43	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	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	43										
Public debt benchmark	**70**	**70**	**70**	**70**	**70**	**70**	**70**	**70**	**70**	**70**	**70**
PV of Debt-to-Revenue Ratio											
Baseline	**184.3**	**193.7**	**197.6**	**189.0**	**185.4**	**185.0**	**185.2**	**186.5**	**188.0**	**189.7**	**191.6**
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2019-2039 1/	184	189	189	179	175	171	168	167	165	164	163
B. Bound Tests											
B1. Real GDP growth	184	202	218	213	213	216	220	225	231	236	241
B2. Primary balance	184	199	213	203	198	197	196	197	198	199	200
B3. Exports	184	201	218	208	203	202	201	202	202	203	203
B4. Other flows 2/	184	203	214	204	200	199	198	199	200	200	201
B6. One-time 30 percent nominal depreciation	184	218	211	195	182	176	170	166	162	159	157
B6. Combination of B1-B5	184	192	202	193	189	188	187	188	189	190	192
C. Tailored Tests											
C1. Combined contingent liabilities	184	211	213	203	198	197	197	197	198	199	201
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	184										
Debt Service-to-Revenue Ratio											
Baseline	**17.5**	**23.1**	**32.1**	**30.7**	**39.5**	**27.5**	**26.3**	**25.0**	**25.3**	**25.8**	**26.8**
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2019-2039 1/	18	23	33	32	41	29	27	26	26	27	28
B. Bound Tests											
B1. Real GDP growth	18	24	35	35	45	33	32	31	32	33	34
B2. Primary balance	18	23	34	34	42	30	28	26	26	27	28
B3. Exports	18	23	32	31	40	28	27	25	26	27	28
B4. Other flows 2/	18	23	32	31	40	28	27	25	26	27	28
B6. One-time 30 percent nominal depreciation	18	23	34	31	43	28	27	25	25	26	27
B6. Combination of B1-B5	18	23	32	32	40	28	27	25	26	26	27
C. Tailored Tests											
C1. Combined contingent liabilities	18	23	38	33	43	29	27	26	26	26	27
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											

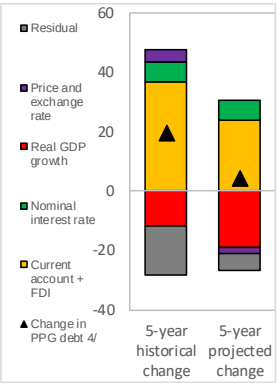
Sources: Country authorities; and staff estimates and projections.
1/ Variables include real GDP growth, GDP deflator and primary deficit in percent of GDP.
2/ Includes official and private transfers and FDI.

Figure 3. Rwanda: Drivers of Debt dynamics—Baseline Scenario[1/]

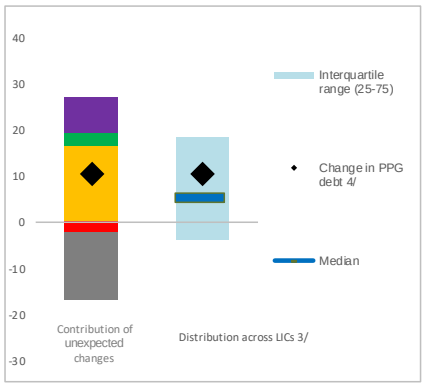
Gross Nominal PPG External Debt
(in percent of GDP; DSA vintages)



Debt-creating flows
(percent of GDP)

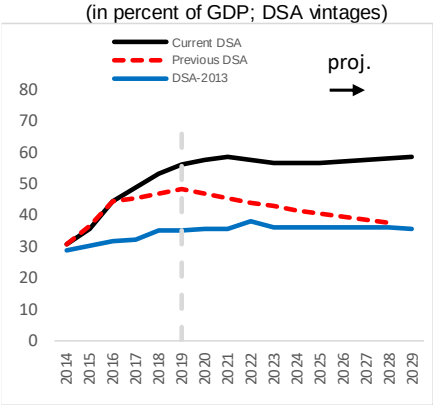


Unexpected Changes in Debt 2/
(past 5 years, percent of GDP)

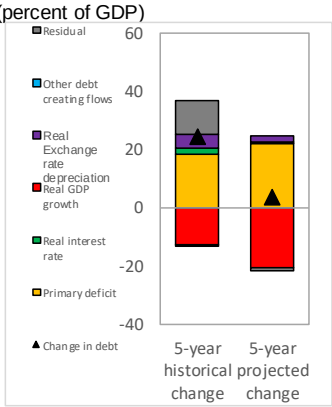


Public debt

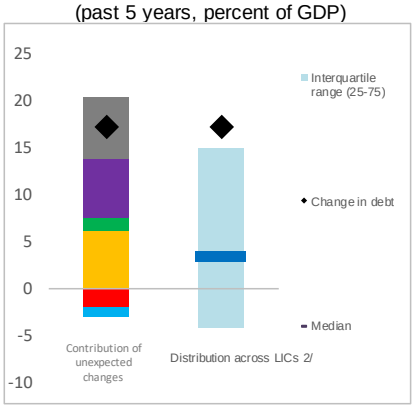
Gross Nominal Public Debt
(in percent of GDP; DSA vintages)



Debt-creating flows
(percent of GDP)



Unexpected Changes in Debt 1/
(past 5 years, percent of GDP)



1/ Compared to 2013 DSA scaling up scenario

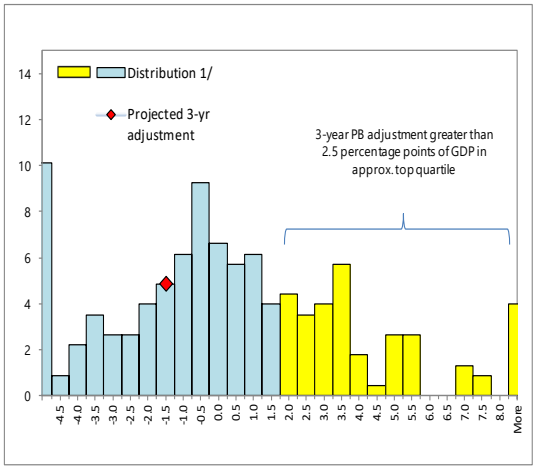
2/ Difference between anticipated and actual contributions on debt ratios.

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

4/ 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.

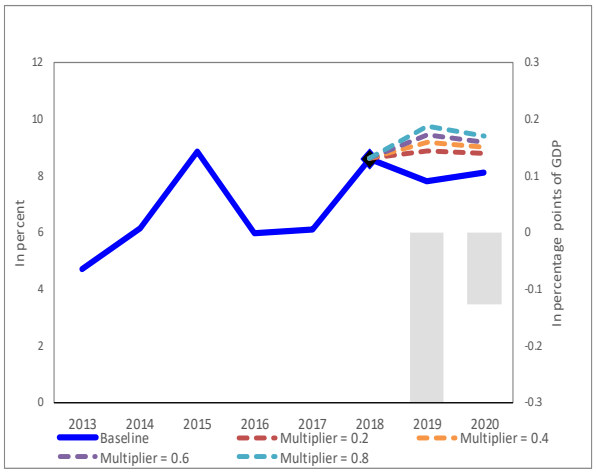
Figure 4. Rwanda: Realism Tools

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.

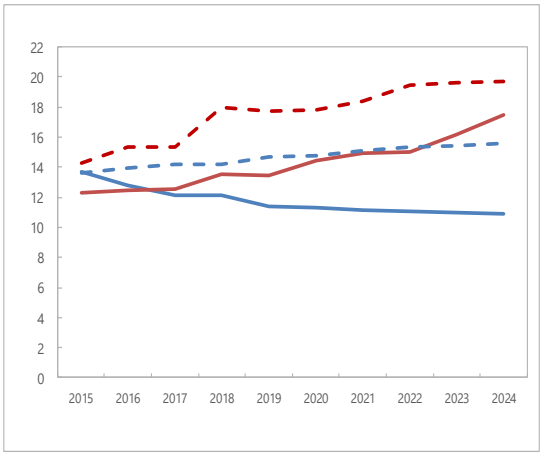
Fiscal Adjustment and Possible Growth Paths 1/



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).

Public and Private Investment Rates

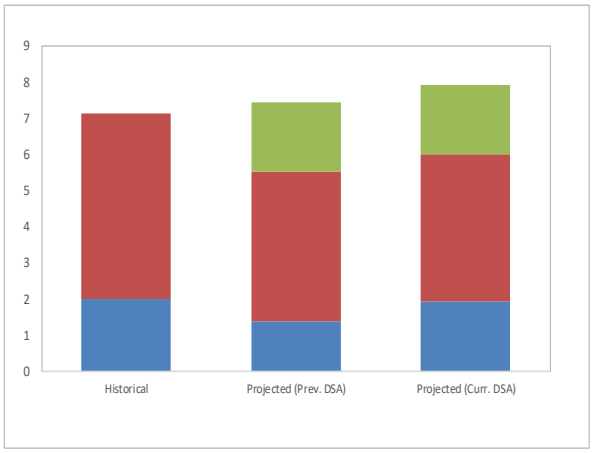
(% of GDP)



Gov. Invest. - Prev. DSA
Gov. Invest. - Current DSA
Priv. Invest. - Prev. DSA
Priv. Invest. - Current DSA

Contribution to Real GDP growth

(percent, 5-year average)

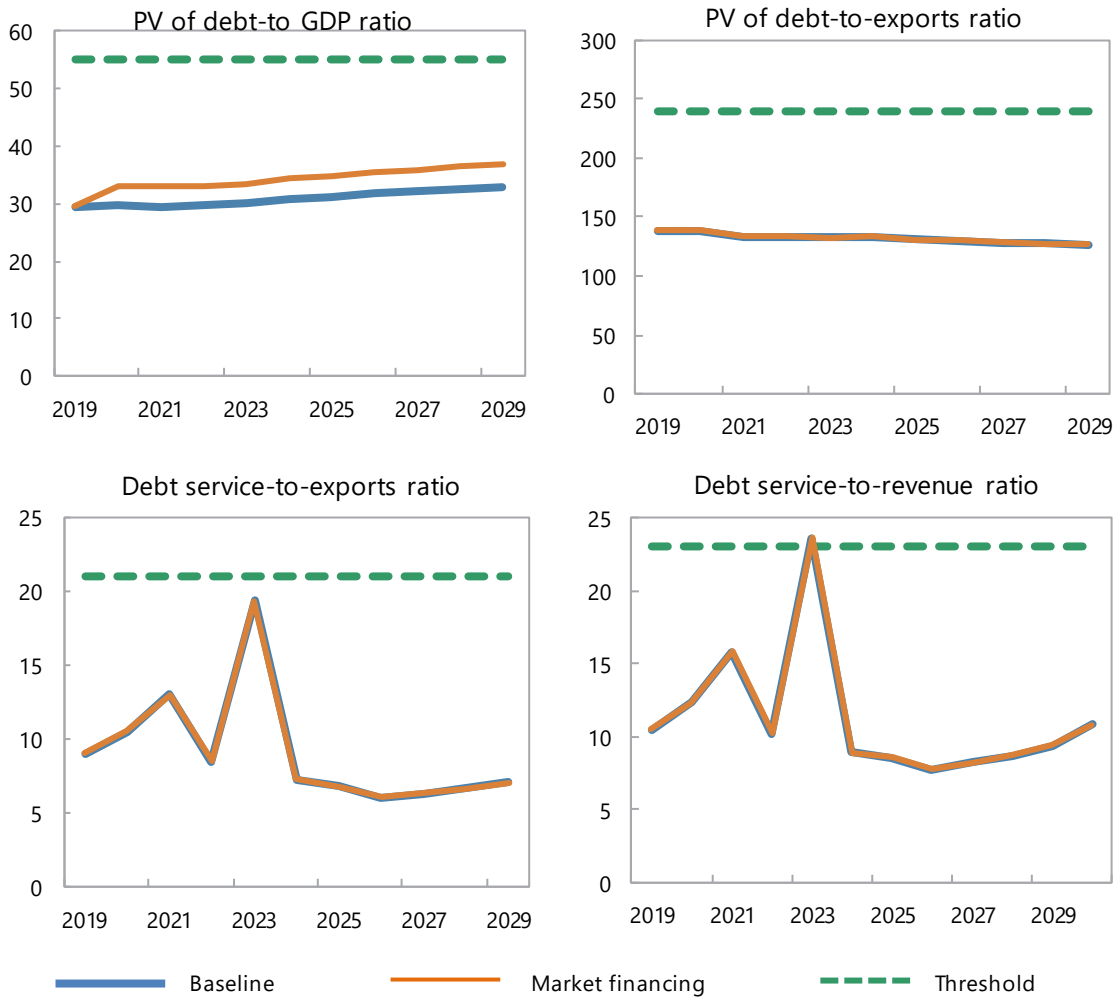


Contribution of other factors
Contribution of government capital
Bugesera effect

Figure 5. Rwanda: Market Financing Risk Indicators

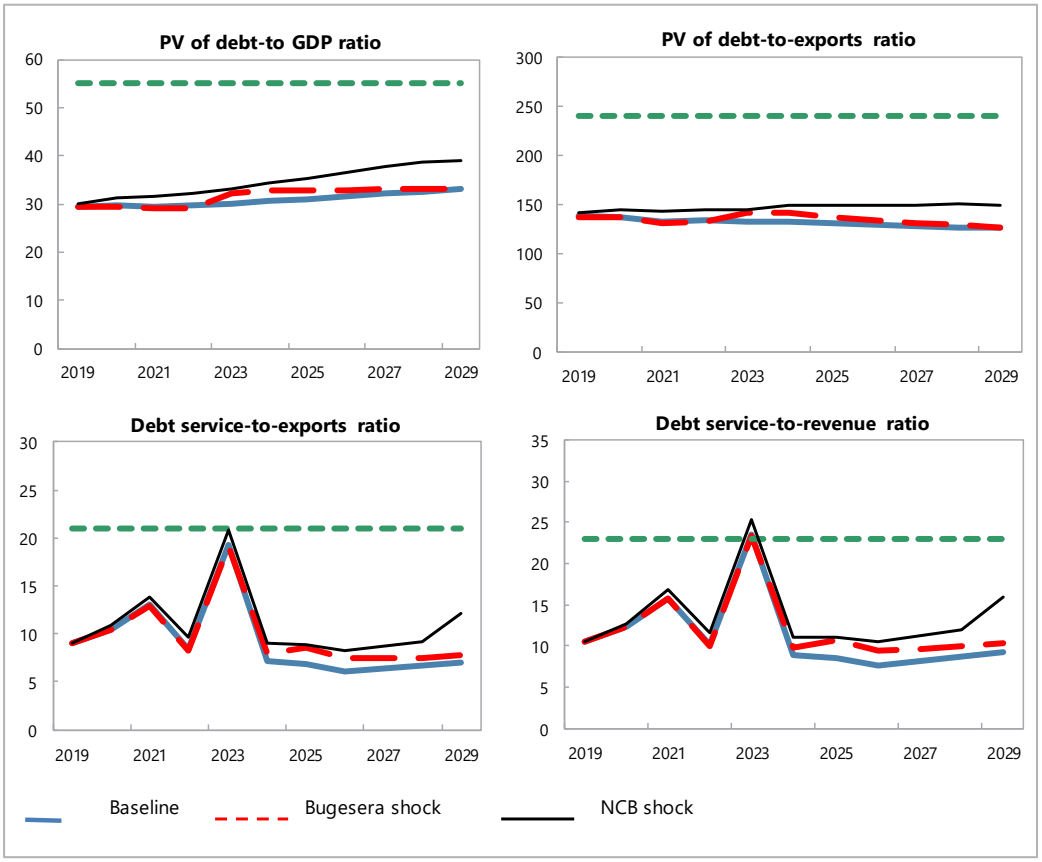
	GFN 1/	EMBI 2/
Benchmarks	14	570
Values	12	407
Breach of benchmark	No	No
Potential heightened liquidity needs	Low	

1/ Maximum gross financing needs (GFN) over 3-year baseline projection horizon.
2/ EMBI spreads correspond to the latest available data.



Sources: Country authorities; and staff estimates and projections.

Figure 6. Rwanda: Indicators of Public and Publicly Guaranteed External Debt Under Customized Scenarios[1/]



1/ Bugesera shock assumes the government is required to take on the remaining financial liability for the Bugesera airport (total $397.5m) in 2024. NCB (Non-Concessionary Borrowing) shock constitutes a scenario in which all additional external borrowing due to the new fiscal anchor is financing on commercial Eurobond terms.