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INTERNATIONAL DEVELOPMENT ASSOCIATION

INTERNATIONAL MONETARY FUND

SENEGAL

Joint World Bank-IMF Debt Sustainability Analysis[1]

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Prepared Jointly by the staffs of the International Development Association (IDA)

and the International Monetary Fund (IMF)

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Senegal: Joint Bank-Fund Debt Sustainability Analysis	
Risk of external debt distress:	Moderate
Overall risk of debt distress	Moderate
Granularity in the risk rating	Some scope to absorb shocks
Application of judgment	No
Mechanical risk rating under the external DSA	Moderate
Mechanical risk rating under the public DSA	Moderate

Senegal's debt is assessed to remain sustainable with a moderate risk of debt distress (external and overall) using the post COVID-19 pandemic scenario as baseline, in line with the previous Debt Sustainability Analysis (DSA) of January 2020. However, the country's space to absorb shocks—previously deemed limited in the short term—has somewhat narrowed compared to the previous DSA. The macroeconomic framework reflects currently available information. However, risks are heavily tilted to the downside: a more extensive global and domestic COVID-19 outbreak could lead to a much steeper economic decline in 2020 and more gradual recovery thereafter.

[1] This DSA has been prepared following the revised LIC-DSA framework. It updates the previous Joint DSA (IMF Country Report No. 20/11). Senegal's debt carrying capacity, calculated based on the April and October 2019 WEOs and the 2018 CPIA, is classified as strong. The applicable thresholds to public and publicly guaranteed external debt are: 55 percent for the PV of debt-to-GDP ratio, 240 percent for the PV of debt-to-exports ratio, 21 percent for the debt service-to-exports ratio, and 23 percent for the debt service-to-revenue ratio. The applicable benchmark for the PV of total public debt for strong debt carrying capacity is 70 percent of GDP.

1. This DSA updates the joint World Bank-IMF analysis of January 2020 using the post COVID-19 pandemic as baseline. [2] It uses the same debt stocks for 2018 and 2019 as in the previous DSA, with a much-revised macroeconomic environment reflecting the impact of the COVID-19 pandemic as used in the staff report for the 2020 RCF/RFI. Compared with the previous DSA, the pandemic is reflected as a one-time large shock leading to a significant decline in GDP and a widening of the fiscal and current account deficits. GDP is expected to rebound in 2021 as the situation is assumed to normalize in H2 2020.

2. The main revisions to the macroeconomic assumptions can be summarized as follows:

- The authorities have revised ***GDP growth*** in 2019 down to 5.3 percent from 6 percent in the last DSA. For 2020, staff's preliminary assessment is that growth will decline to 3 percent in 2020 compared to 6.8 percent in the previous DSA. The economy is assumed to gradually recover starting in 2021 with a growth rate of 5.5 percent (7 percent in previous DSA) and remaining high over the medium-term. Over the long run, real GDP growth is projected to converge to about 5.1 percent over 2025-39 as in the last DSA.

- The ***public sector deficit*** is estimated at about 5 percent of GDP in 2019 compared to 4.7 in the previous DSA and to widen sharply to 6.9 percent of GDP in 2020 owing to revenue losses and additional expenditures to fight the pandemic.

- The ***current account deficit*** stood at 9.1 percent in 2019 (broadly the same as in the previous DSA) and is projected to widen to 11.3 percent of GDP in 2020. The negative impact of the crisis on goods and services exports, as well as remittances, is only partly offset by savings on oil imports. Over the long term, the average current account deficit is projected to decline to about 1.5 percent of GDP (slightly higher than the 1.2 percent in the last DSA) (Text Table 1).

- The realism tools do not flag any serious issues.

3. The DSA assumes a financing mix consistent with a prudent borrowing strategy, aimed at gradually increasing the share of domestic debt and seeking new external financing on concessional terms whenever feasible. The projected large financing gaps related to the COVID-19 epidemic are assumed to be filled mostly with grants and highly concessional loans. The authorities are also considering delaying some planned project and their related loan disbursements. The initial 2020 financing plan did not envisage any Eurobond issuances, but relies on net issuances of about 1 percent of GDP in the regional WAEMU market. On March 21, the BCEAO announced a series of measures to enhance liquidity provision and current projections assumes this financing will materialize, noting however it could be at risk in case of a more prolonged crisis. The average maturity of new external debt is assumed close to 18 years, with 6-year grace period and an average interest rate of 4 percent, broadly unchanged

[2] See IMF Country Report No. 20/11.

compared to the previous DSA. New medium- and long-term domestic debt has an average maturity of 5 years, with 3-year grace period.

4. An analysis of the impact of the COVID-19 on debt sustainability indicates that the risk of debt distress remains moderate. The assessment is unchanged relative to the previous DSA. All external debt indicators remain below the relevant indicative threshold under the new baseline except the debt service-to-exports ratio which now peaks at 24 percent in 2020 (22.7 percent in the January DSA).[3] However, a further shortfall in export receipts than currently envisaged in 2020 could push the PV of external debt-to-export ratio above its threshold. Total public sector debt now peaks at 67 percent of GDP in 2020 (against 62 percent previously forecasted) before resuming a downwards trajectory. Stress tests also indicate that external and public debt would remain sustainable over the projection period (Appendix Tables 1 and 2 and Figures 1 and 2). However, Senegal's space to absorb shock has narrowed compared to the previous DSA. (Figure 7).

5. Debt is projected to remain sustainable over the medium term supported by the authorities' strong commitment to maintaining macroeconomic stability and fiscal discipline under the PCI and the WAEMU convergence criteria. The authorities remain firmly committed to their reform objectives supported by the PCI and to returning as soon as possible to the pre-crisis fiscal path anchored by the WAEMU convergence criteria. The projected large financing gaps related to the COVID-19 epidemic are assumed to be filled mostly with highly concessional loans and possibly grants, which would partly displace lower priority externally financed projects and related disbursements. Senegal has access to international capital markets but was not considering any Eurobond issuance in 2020.

6. Risks to the outlook depend primarily on the depth and duration of the COVID-19 pandemic. A deeper global slowdown combined with a prolonged outbreak in Senegal could further lower GDP and export receipts in 2020 and weaken the expected recovery thereafter. Lower oil prices benefit Senegal in the short term and help mitigate the current account deterioration but, should world oil and gas prices remain low for a prolonged period this could jeopardize planned investments in hydrocarbon production and significantly alter the medium-term outlook.

[3] The one-time breach of the external debt service to exports ratio is automatically discounted from the analysis according to the LIC-DSF guidance note.

Text Table 1. Senegal: Evolution of Selected Macroeconomic Indicators, 2019–22

	2019	2020	2021	2022	Med. term[1]	Long term[2]
Real GDP growth						
Current DSA	5.3	3.0	5.5	8.0	6.8	5.1
Previous DSA	6.0	6.8	7.0	8.4	7.9	5.1
Overall fiscal deficit (percent of GDP)						
Current DSA[3]	5.0	6.9	4.6	4.3	4.6	3.4
Previous DSA[4]	4.7	4.1	4.1	4.1	4.0	2.4
Current account deficit (percent of GDP)						
Current DSA	9.1	11.3	11.4	8.5	7.8	1.5
Previous DSA	9.2	10.7	10.5	7.7	7.6	1.1
Exports of goods and services (percent of GDP)						
Current DSA	24.1	20.9	22.9	26.2	26.7	31.4
Previous DSA	22.7	23.5	24.1	26.9	26.4	31.3

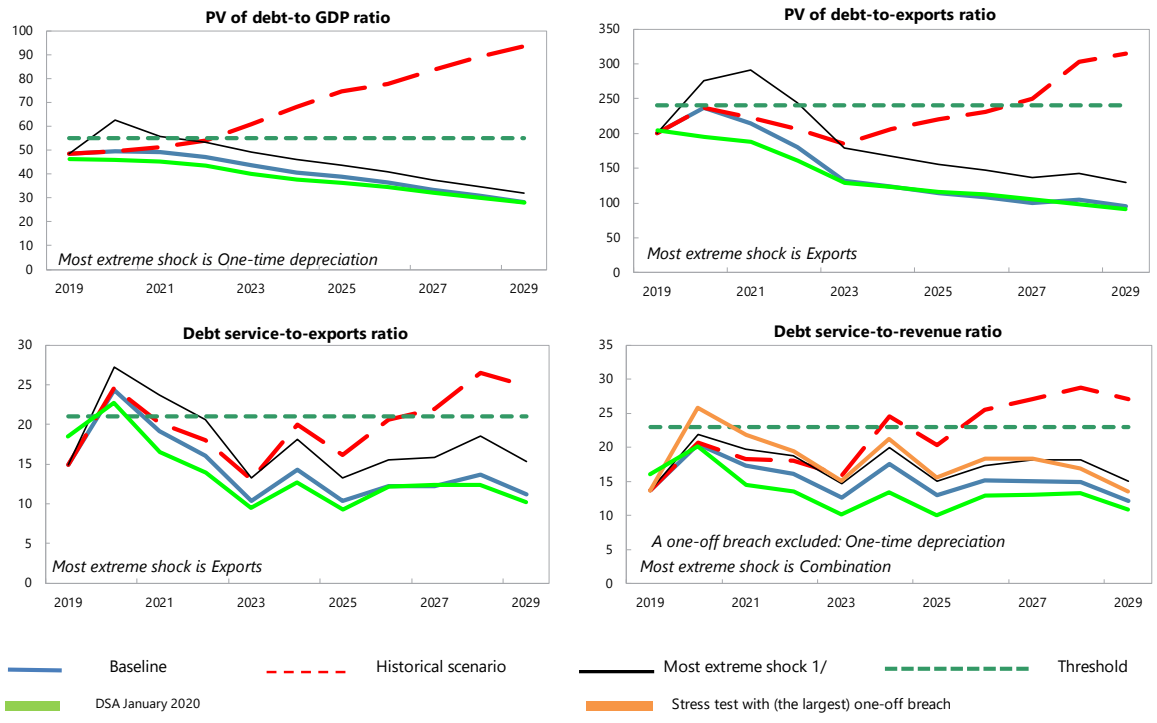
[1] Defined as the first 5 years of the projection period. For the current DSA update, the medium term covers the years 2019-2024.

[2] Defined as the last 15 years of the projection period. For the current DSA update, the long term covers the years 2025-2039.

[3] Overall fiscal deficit of General Government and Public Sector.

[4] Overall fiscal deficit of Central Government.

Figure 1. Senegal: Indicators of Public and Publicly Guaranteed External Debt under Alternatives Scenarios, 2019-29



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	4.0%	4.0%
USD Discount rate	5.0%	5.0%
Avg. maturity (incl. grace period)	17	17
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: Senegal 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.

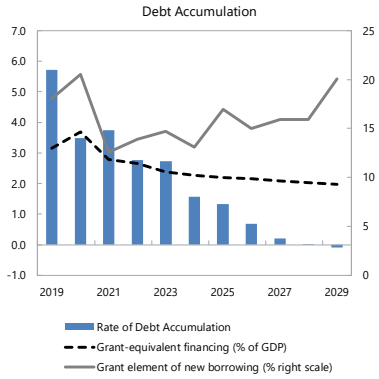
2/ The magnitude of shocks used for the commodity price shock stress test are based on the commodity prices outlook prepared by the IMF research department.

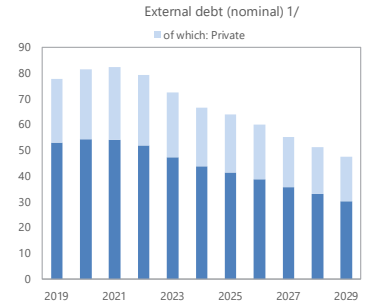
Table 1. Senegal: External Debt Sustainability Framework, Baseline Scenario, 2016-39

(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/	**55.1**	**62.0**	**68.3**	**77.5**	**81.3**	**82.2**	**79.2**	**72.3**	**66.4**	**47.4**	**26.8**	**52.6**	**66.9**
of which: public and publicly guaranteed (PPG)	**31.5**	**38.9**	**48.1**	**52.9**	**54.2**	**53.9**	**51.8**	**47.3**	**43.6**	**30.2**	**19.1**	**29.9**	**43.9**
Change in external debt	-2.1	6.9	6.3	9.3	3.8	0.9	-3.0	-6.9	-5.9	-3.7	-1.4		
Identified net debt-creating flows	**-0.9**	**-0.3**	**-0.7**	**1.9**	**4.5**	**2.3**	**-1.9**	**-8.3**	**-6.1**	**-2.8**	**-2.5**	**3.1**	**-2.2**
Non-interest current account deficit	**2.7**	**6.1**	**6.8**	**6.7**	**8.7**	**8.8**	**5.8**	**1.2**	**0.5**	**1.1**	**0.4**	**5.4**	**3.4**
Deficit in balance of goods and services	11.0	13.8	15.0	15.5	15.8	16.9	13.0	7.3	6.6	3.6	2.8	**14.1**	**8.7**
Exports	21.5	21.9	23.5	24.1	20.9	22.9	26.2	32.9	33.0	29.6	31.0		
Imports	32.5	35.7	38.6	39.7	36.7	39.9	39.2	40.2	39.6	33.2	33.8		
Net current transfers (negative = inflow)	-9.4	-9.4	-8.9	-9.2	-7.7	-8.7	-9.3	-9.4	-9.2	-8.5	-7.7	**-9.5**	**-8.9**
of which: official	-0.4	-0.4	-0.3	-0.2	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.3		
Other current account flows (negative = net inflow)	1.2	1.6	0.6	0.4	0.6	0.5	2.1	3.3	3.0	6.1	5.3	**0.8**	**3.6**
Net FDI (negative = inflow)	**-1.3**	**-2.4**	**-3.4**	**-3.7**	**-4.6**	**-5.0**	**-4.4**	**-4.2**	**-4.0**	**-2.9**	**-2.6**	**-1.9**	**-3.9**
Endogenous debt dynamics 2/	**-2.3**	**-3.9**	**-4.0**	**-1.1**	**0.4**	**-1.5**	**-3.3**	**-5.3**	**-2.6**	**-0.9**	**-0.3**		
Contribution from nominal interest rate	1.4	1.2	2.0	2.4	2.6	2.7	2.7	2.4	2.6	1.7	0.9		
Contribution from real GDP growth	-3.4	-3.7	-3.6	-3.6	-2.2	-4.1	-6.0	-7.7	-5.1	-2.6	-1.2		
Contribution from price and exchange rate changes	-0.4	-1.4	-2.5	...	...	...	...	...	...	...	...		
Residual 3/	**-1.2**	**7.1**	**7.0**	**7.4**	**-0.7**	**-1.4**	**-1.1**	**1.4**	**0.3**	**-1.0**	**1.1**	**0.4**	**0.3**
of which: exceptional financing	2.3	0.6	1.1	-1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Sustainability indicators													
PV of PPG external debt-to-GDP ratio	**...**	**...**	**43.4**	**48.4**	**49.6**	**49.2**	**47.2**	**43.5**	**40.6**	**28.3**	**17.5**		
PV of PPG external debt-to-exports ratio	**...**	**...**	**184.4**	**200.6**	**237.0**	**214.6**	**180.0**	**132.4**	**123.1**	**95.5**	**56.5**		
PPG debt service-to-exports ratio	**10.4**	**8.9**	**16.3**	**14.9**	**24.3**	**19.1**	**16.1**	**10.3**	**14.3**	**11.2**	**5.9**		
PPG debt service-to-revenue ratio	**12.0**	**7.8**	**15.6**	**13.6**	**20.4**	**17.4**	**16.2**	**12.6**	**17.5**	**12.2**	**6.7**		
Gross external financing need (Billion of U.S. dollars)	0.9	1.5	1.8	1.8	2.6	2.5	2.0	0.5	0.9	1.4	0.1		
Key macroeconomic assumptions													
Real GDP growth (in percent)	6.4	7.4	6.4	5.3	3.0	5.5	8.0	11.2	7.9	5.6	4.7	**4.8**	**6.2**
GDP deflator in US dollar terms (change in percent)	0.7	2.7	4.1	-3.7	1.6	2.8	1.9	3.2	2.9	3.1	2.7	**-1.3**	**2.1**
Effective interest rate (percent) 4/	2.7	2.4	3.6	3.6	3.5	3.5	3.6	3.5	3.9	3.6	3.5	**2.3**	**3.7**
Growth of exports of G&S (US dollar terms, in percent)	1.8	12.2	19.2	4.0	-9.2	18.8	25.9	43.8	11.5	9.5	7.5	**4.9**	**11.5**
Growth of imports of G&S (US dollar terms, in percent)	-1.8	21.3	19.6	4.4	-3.2	17.7	8.3	17.5	9.5	5.2	9.1	**3.5**	**7.1**
Grant element of new public sector borrowing (in percent)	...	...	...	18.1	20.5	12.6	13.9	14.7	13.1	20.0	18.2	**...**	**16.1**
Government revenues (excluding grants, in percent of GDP)	18.5	25.1	24.5	26.3	24.9	25.2	26.1	26.9	27.0	27.1	27.3	**18.1**	**26.5**
Aid flows (in Billion of US dollars) 5/	0.9	1.0	1.0	0.7	0.8	0.6	0.7	0.7	0.8	1.0	1.7		
Grant-equivalent financing (in percent of GDP) 6/	...	...	...	3.2	3.7	2.8	2.6	2.4	2.3	2.0	1.7	**...**	**2.5**
Grant-equivalent financing (in percent of external financing) 6/	...	...	...	31.2	38.5	33.8	37.7	41.7	39.0	54.4	53.1	**...**	**41.9**
Nominal GDP (Billion of US dollars)	19	21	23	24	25	27	29	34	37	57	120		
Nominal dollar GDP growth	7.1	10.3	10.8	1.4	4.6	8.4	10.1	14.7	11.0	8.9	7.4	**3.4**	**8.5**
Memorandum items:													
PV of external debt 7/	...	...	63.5	73.0	76.7	77.5	74.6	68.5	63.4	45.5	25.2		
In percent of exports	...	...	270.0	302.5	366.5	337.9	284.4	208.4	192.1	153.7	81.3		
Total external debt service-to-exports ratio	14.6	14.8	18.7	18.4	30.0	24.7	20.7	13.5	18.0	14.4	7.5		
PV of PPG external debt (in Billion of US dollars)			10.1	11.4	12.2	13.2	13.9	14.7	15.2	16.0	21.0		
(PVt-PVt-1)/GDPt-1 (in percent)				5.7	3.5	3.7	2.8	2.7	1.6	-0.1	0.6		
Non-interest current account deficit that stabilizes debt ratio	4.9	-0.8	0.5	-2.6	4.9	7.9	8.9	8.1	6.3	4.9	1.8		

Definition of external/domestic debt	Currency-based
Is there a material difference between the two criteria?	Yes





Sources: Senegal 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.

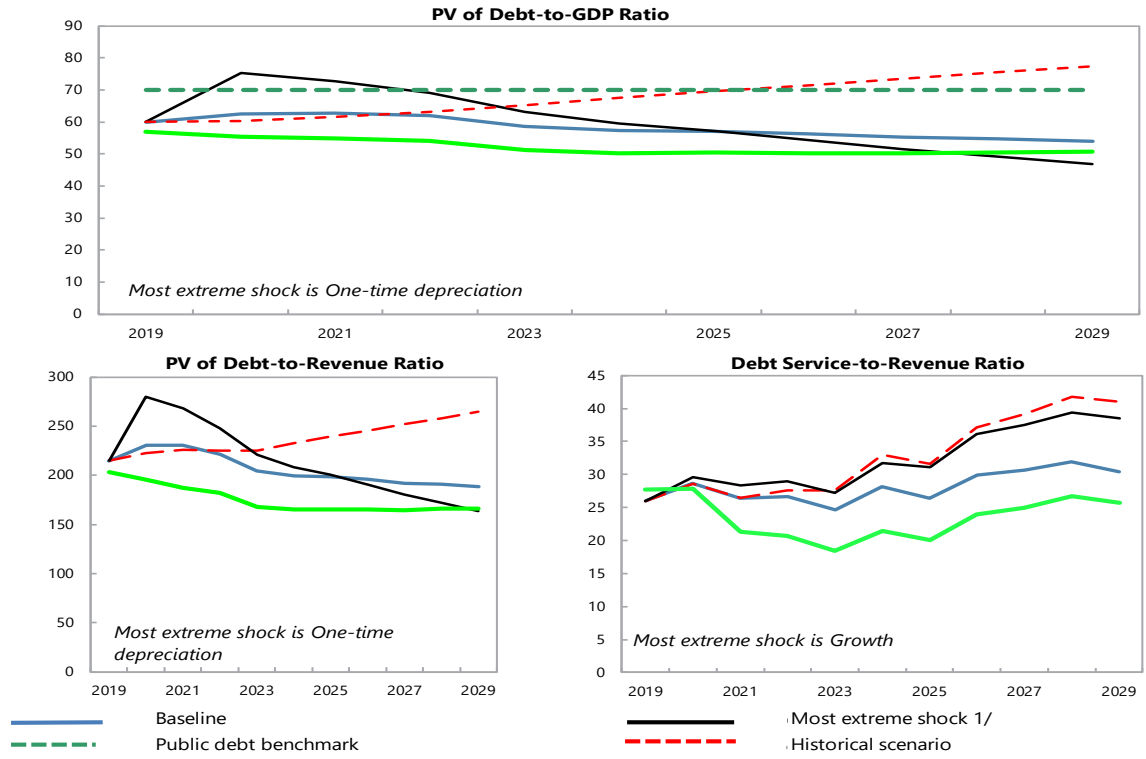
5/ Defined as grants, concessional loans, and debt relief.

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.

Figure 2. Senegal: Indicators of Public Debt Under Alternative Scenarios, 2019-29



Borrowing Assumptions for Stress Tests*	Default	User defined
Shares of marginal debt		
External PPG medium and long-term	45%	45%
Domestic medium and long-term	50%	50%
Domestic short-term	6%	6%
Terms of marginal debt		
External MLT debt		
Avg. nominal interest rate on new borrowing in USD	4.0%	4.0%
Avg. maturity (incl. grace period)	17	17
Avg. grace period	6	6
Domestic MLT debt		
Avg. real interest rate on new borrowing	3.5%	3.5%
Avg. maturity (incl. grace period)	5	5
Avg. grace period	3	3
Domestic short-term debt		
Avg. real interest rate	2%	2%

* 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: Senegal 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.

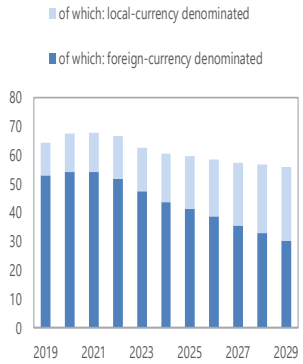
Table 2. Senegal: Public Sector Debt Sustainability Framework, Baseline Scenario, 2016-39

(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/	**47.5**	**61.1**	**62.1**	**64.2**	**67.4**	**67.6**	**66.5**	**62.5**	**60.3**	**55.9**	**63.2**	**41.6**	**61.5**
of which: external debt	**31.5**	**38.9**	**48.1**	**52.9**	**54.2**	**53.9**	**51.8**	**47.3**	**43.6**	**30.2**	**19.1**	**29.9**	**43.9**
	16.1	22.2	13.9	11.2	13.3	13.7	14.7	15.1	16.7	25.7	44.1		
Change in public sector debt	3.0	13.6	1.0	2.1	3.3	0.2	-1.1	-4.0	-2.2	-0.8	1.2		
Identified debt-creating flows	**1.2**	**-4.7**	**2.9**	**2.7**	**3.8**	**0.2**	**-1.1**	**-4.0**	**-2.1**	**-0.8**	**1.2**	**2.3**	**-0.4**
Primary deficit	**1.6**	**0.7**	**2.2**	**3.0**	**4.7**	**2.5**	**2.4**	**2.1**	**1.6**	**1.3**	**2.4**	**2.5**	**2.1**
Revenue and grants	20.7	27.2	26.5	27.9	27.1	27.2	28.0	28.7	28.7	28.7	28.7	**20.2**	**28.3**
of which: grants	2.2	2.2	2.0	1.6	2.2	2.0	1.9	1.8	1.7	1.6	1.3		
Primary (noninterest) expenditure	22.3	27.9	28.8	30.9	31.8	29.8	30.4	30.7	30.3	30.0	31.1	**22.8**	**30.3**
Automatic debt dynamics	**-0.4**	**-5.3**	**0.6**	**-0.3**	**-0.9**	**-2.3**	**-3.5**	**-6.1**	**-3.7**	**-2.1**	**-1.3**		
Contribution from interest rate/growth differential	-1.4	-2.4	-2.0	-1.5	0.2	-2.0	-3.6	-5.6	-3.3	-1.2	-0.7		
of which: contribution from average real interest rate	1.2	0.8	1.7	1.7	2.1	1.5	1.4	1.2	1.2	1.8	2.0		
of which: contribution from real GDP growth	-2.7	-3.3	-3.7	-3.1	-1.9	-3.5	-5.0	-6.7	-4.6	-3.0	-2.8		
Contribution from real exchange rate depreciation	1.0	-2.9	2.6	...	...	...	...	...	...	...	...		
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	**1.8**	**18.2**	**-1.9**	**0.6**	**-1.6**	**-0.3**	**0.1**	**-0.5**	**-0.4**	**-1.0**	**-0.5**	**2.0**	**-0.6**
Sustainability indicators													
PV of public debt-to-GDP ratio 2/	**...**	**...**	**58.9**	**60.0**	**62.6**	**62.8**	**61.9**	**58.6**	**57.3**	**54.0**	**61.6**		
PV of public debt-to-revenue and grants ratio	**...**	**...**	**222.2**	**214.8**	**230.9**	**230.4**	**221.0**	**204.3**	**199.6**	**188.2**	**214.7**		
Debt service-to-revenue and grants ratio 3/	**35.6**	**26.0**	**39.6**	**26.0**	**28.7**	**26.4**	**26.6**	**24.6**	**28.1**	**30.3**	**37.8**		
Gross financing need 4/	7.3	6.3	12.7	10.2	12.4	9.7	9.8	9.1	9.6	10.0	13.3		
Key macroeconomic and fiscal assumptions													
Real GDP growth (in percent)	6.4	7.4	6.4	5.3	3.0	5.5	8.0	11.2	7.9	5.6	4.7	**4.8**	**6.2**
Average nominal interest rate on external debt (in percent)	3.1	2.7	4.1	4.2	3.9	3.8	3.8	3.7	3.8	3.8	3.6	**2.6**	**3.9**
Average real interest rate on domestic debt (in percent)	5.2	4.1	5.2	4.1	4.4	3.9	4.3	2.8	3.2	2.8	3.3	**4.7**	**3.4**
Real exchange rate depreciation (in percent, + indicates depreciation)	3.3	-9.8	7.0	...	...	...	...	...	...	...	...	**3.0**	**...**
Inflation rate (GDP deflator, in percent)	1.0	0.6	-0.5	1.7	2.0	1.7	1.4	2.9	2.7	3.1	2.7	**0.6**	**2.5**
Growth of real primary spending (deflated by GDP deflator, in percent)	10.6	34.3	9.7	13.1	5.8	-1.1	10.2	12.5	6.2	5.8	4.7	**8.9**	**6.7**
Primary deficit that stabilizes the debt-to-GDP ratio 5/	-1.4	-12.9	1.3	0.9	1.4	2.3	3.5	6.1	3.7	2.2	1.3	**-4.3**	**2.6**
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?	Yes

Public sector debt 1/



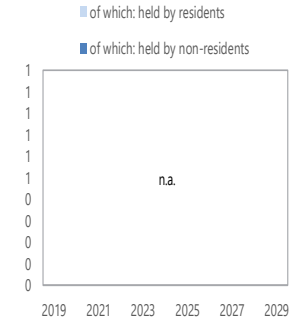


Table 3. Senegal: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2019-29 (Percent)

	Projections 1/										
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
PV of debt-to GDP ratio											
Baseline	48	50	49	47	44	41	39	36	33	31	28
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2019-2039 2/	48	50	51	54	**61**	**68**	**75**	**78**	**83**	**89**	**93**
B. Bound Tests											
B1. Real GDP growth	48	51	53	50	47	43	41	39	36	33	30
B2. Primary balance	48	50	50	48	44	42	40	37	34	32	29
B3. Exports	48	54	**56**	54	50	46	44	42	38	35	32
B4. Other flows 3/	48	53	**56**	54	50	46	44	42	38	35	32
B5. Depreciation	48	**63**	**56**	53	49	46	44	41	37	35	32
B6. Combination of B1-B5	48	**58**	**60**	**58**	53	50	48	45	41	38	34
C. Tailored Tests											
C1. Combined contingent liabilities	48	52	52	50	46	44	42	40	37	34	32
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	48	**55**	55	53	49	46	44	41	37	34	31
Threshold	55	55	55	55	55	55	55	55	55	55	55
PV of debt-to-exports ratio											
Baseline	201	237	215	180	132	123	114	108	100	105	96
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2019-2039 2/	201	237	223	206	185	206	220	232	**250**	**303**	**315**
B. Bound Tests											
B1. Real GDP growth	201	237	215	180	132	123	114	108	100	105	96
B2. Primary balance	201	239	219	184	135	126	117	111	103	108	99
B3. Exports	201	**276**	**291**	**244**	179	167	155	148	137	142	129
B4. Other flows 3/	201	**253**	**245**	206	151	141	131	125	115	120	109
B5. Depreciation	201	237	192	161	119	110	102	97	89	94	86
B6. Combination of B1-B5	201	**273**	**241**	222	163	152	141	134	124	129	117
C. Tailored Tests											
C1. Combined contingent liabilities	201	**251**	227	191	140	132	124	118	110	116	107
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	201	237	215	181	134	125	115	109	100	104	95
Threshold	240	240	240	240	240	240	240	240	240	240	240
Debt service-to-exports ratio											
Baseline	15	**24**	19	16	10	14	10	12	12	14	11
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2019-2039 2/	15	**25**	20	18	13	20	16	21	**22**	**27**	**25**
B. Bound Tests											
B1. Real GDP growth	15	**24**	19	16	10	14	10	12	12	14	11
B2. Primary balance	15	**24**	19	16	10	14	10	12	12	14	11
B3. Exports	15	**27**	**24**	21	13	18	13	16	16	19	15
B4. Other flows 3/	15	**24**	20	17	11	15	11	13	13	16	13
B5. Depreciation	15	**24**	19	15	10	14	10	12	12	12	10
B6. Combination of B1-B5	15	**26**	**22**	19	12	16	12	14	15	17	14
C. Tailored Tests											
C1. Combined contingent liabilities	15	**24**	20	16	11	15	11	13	13	14	12
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	15	**24**	20	17	11	17	15	16	13	12	9
Threshold	21	21	21	21	21	21	21	21	21	21	21
Debt service-to-revenue ratio											
Baseline	14	20	17	16	13	17	13	15	15	15	12
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2019-2039 2/	14	21	18	18	16	**25**	20	**26**	**27**	**29**	**27**
B. Bound Tests	14	20	17	17	14	20	15	18	18	18	14
B1. Real GDP growth	14	21	19	17	13	19	14	16	16	16	13
B2. Primary balance	14	20	17	16	13	18	13	15	15	15	12
B3. Exports	14	21	18	17	14	19	14	16	16	17	14
B4. Other flows 3/	14	20	18	17	14	18	14	16	16	17	14
B5. Depreciation	14	**26**	22	19	15	21	16	18	18	17	14
B6. Combination of B1-B5	14	22	20	19	15	20	15	17	18	18	15
C. Tailored Tests											
C1. Combined contingent liabilities	14	20	18	17	13	18	13	16	16	15	13
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	14	20	18	17	14	21	19	20	16	13	9
Threshold	23	23	23	23	23	23	23	23	23	23	23

Sources: Senegal 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. Senegal: Sensitivity Analysis for Key Indicators of Public Debt, 2019-29

(Percent of GDP, unless otherwise indicated)

	Projections 1/										
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
PV of Debt-to-GDP Ratio											
Baseline	60	63	63	62	59	57	57	56	55	55	54
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2019-2039 2/	60	60	62	63	65	67	70	72	73	75	77
A2. Alternative Scenario :[Customize, enter title]	57	56	55	54	51	50	50	50	50	51	51
B. Bound Tests											
B1. Real GDP growth	60	66	70	70	68	68	70	70	71	72	72
B2. Primary balance	60	63	65	64	60	59	59	58	57	56	55
B3. Exports	60	65	68	67	64	62	62	60	59	58	57
B4. Other flows 3/	60	66	70	69	65	63	63	62	60	59	58
B5. Depreciation	60	75	73	69	63	59	57	54	51	49	47
B6. Combination of B1-B5	60	61	63	61	58	56	55	54	53	52	51
C. Tailored Tests											
C1. Combined contingent liabilities	60	69	69	68	64	63	62	61	60	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	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	60	63	63	62	59	58	57	56	55	54	54
Public debt benchmark	70	70	70	70	70	70	70	70	70	70	70
PV of Debt-to-Revenue Ratio											
Baseline	215	231	230	221	204	200	199	196	192	191	188
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2019-2039 2/	215	223	226	225	225	232	239	245	252	258	264
A2. Alternative Scenario :[Customize, enter title]	26	28	23	24	20	21	21	25	26	26	25
B. Bound Tests											
B1. Real GDP growth	215	241	254	250	237	237	242	244	245	248	251
B2. Primary balance	215	234	238	228	210	205	204	201	197	196	193
B3. Exports	215	238	251	240	221	216	214	211	206	203	199
B4. Other flows 3/	215	243	256	245	226	220	218	215	210	206	202
B5. Depreciation	215	280	268	248	221	208	200	190	180	172	164
B6. Combination of B1-B5	215	226	230	219	201	195	193	189	184	181	177
C. Tailored Tests											
C1. Combined contingent liabilities	215	256	255	244	225	219	217	214	209	207	204
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	215	231	231	222	206	201	200	196	192	190	187
Debt Service-to-Revenue Ratio											
Baseline	26	29	26	27	25	28	26	30	31	32	30
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2019-2039 2/	26	29	26	28	28	33	32	37	39	42	41
A2. Alternative Scenario :[Customize, enter title]	26	28	23	24	20	21	21	25	26	26	25
B. Bound Tests											
B1. Real GDP growth	26	30	28	29	27	32	31	36	37	39	39
B2. Primary balance	26	29	27	27	25	29	28	31	31	33	31
B3. Exports	26	29	27	27	25	29	27	31	32	33	32
B4. Other flows 3/	26	29	27	28	25	29	27	31	32	34	32
B5. Depreciation	26	30	31	30	27	32	29	33	33	34	32
B6. Combination of B1-B5	26	28	27	27	25	28	26	30	30	31	30
C. Tailored Tests											
C1. Combined contingent liabilities	26	29	29	28	26	33	32	32	32	34	33
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	26	29	27	28	26	32	32	35	31	30	28

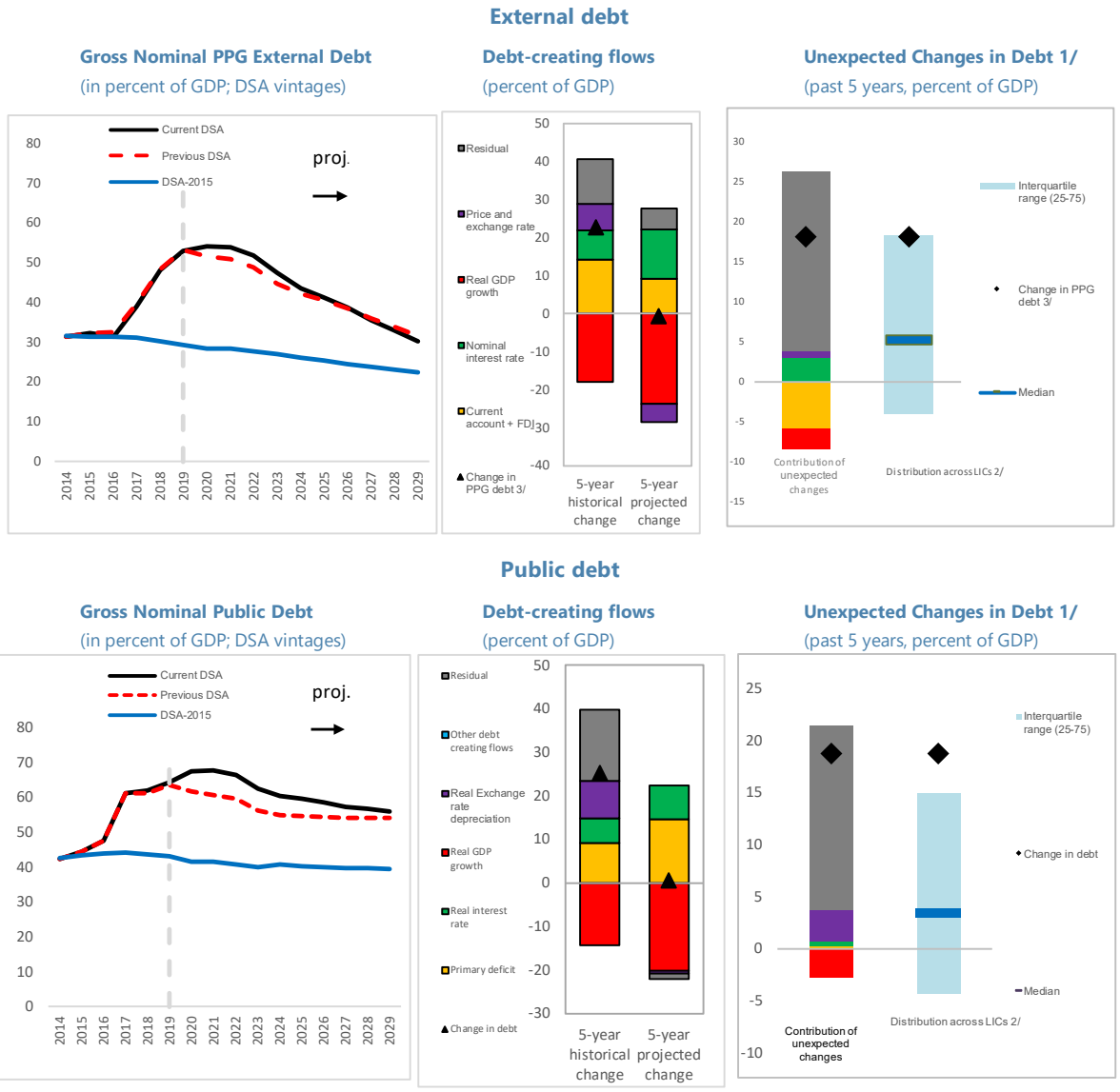
Sources: Senegal authorities; and staff estimates and projections.

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.

Figure 3. Senegal: Driver of Debt Dynamics—Baseline Scenario, 2014-29



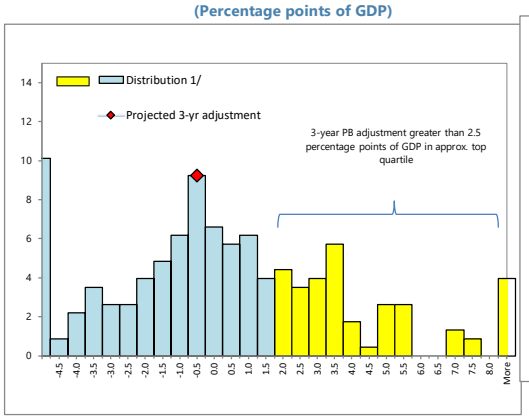
1/ Difference between anticipated and actual contributions on debt ratios.

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.

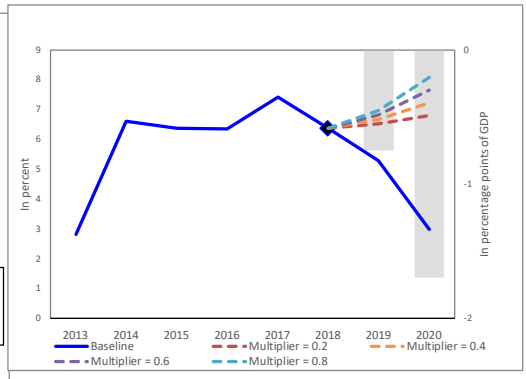
Figure 4. Senegal: Realism Tools, 2013-24

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



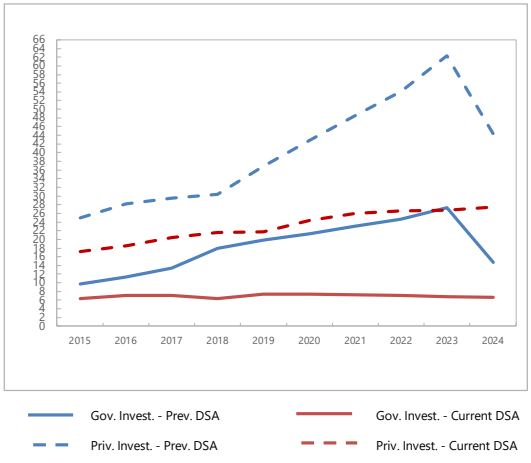
1/ Data cover Fund-supported programs for LICs (excluding emergency financing) approved since 1990. The size of 3-year adjustment from program inception is found on the horizontal axis; the percent of sample is found on the vertical axis.

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)



Contribution to Real GDP growth
(percent, 5-year average)

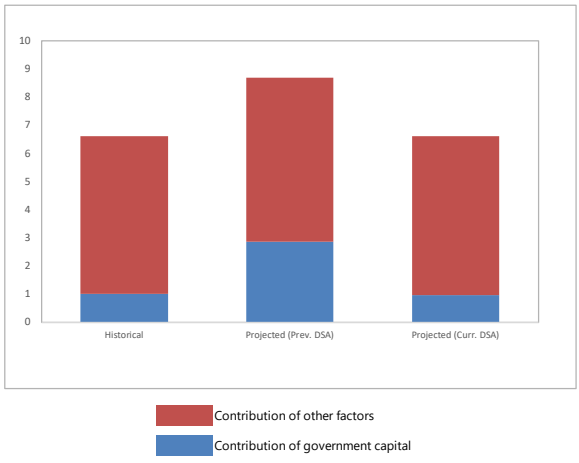
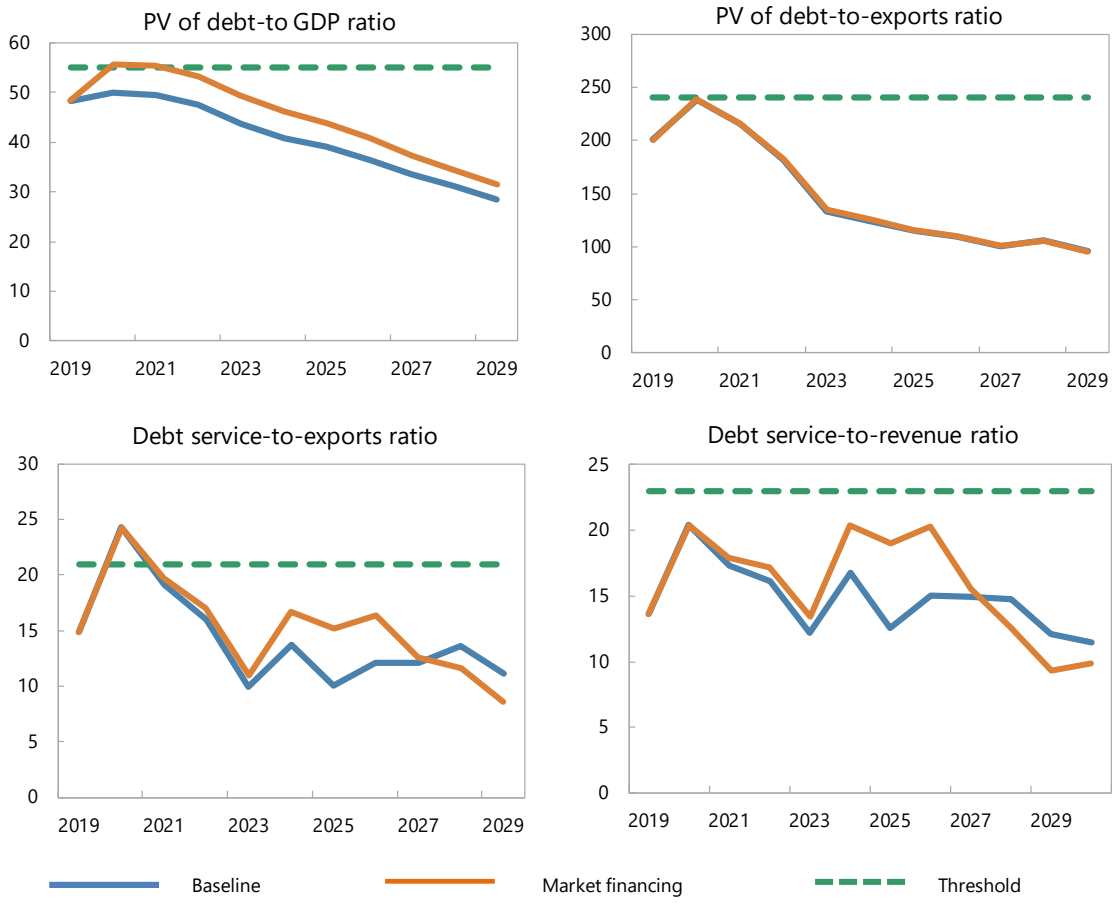


Figure 5. Senegal: Market-Financing Risk Indicators, 2019-29

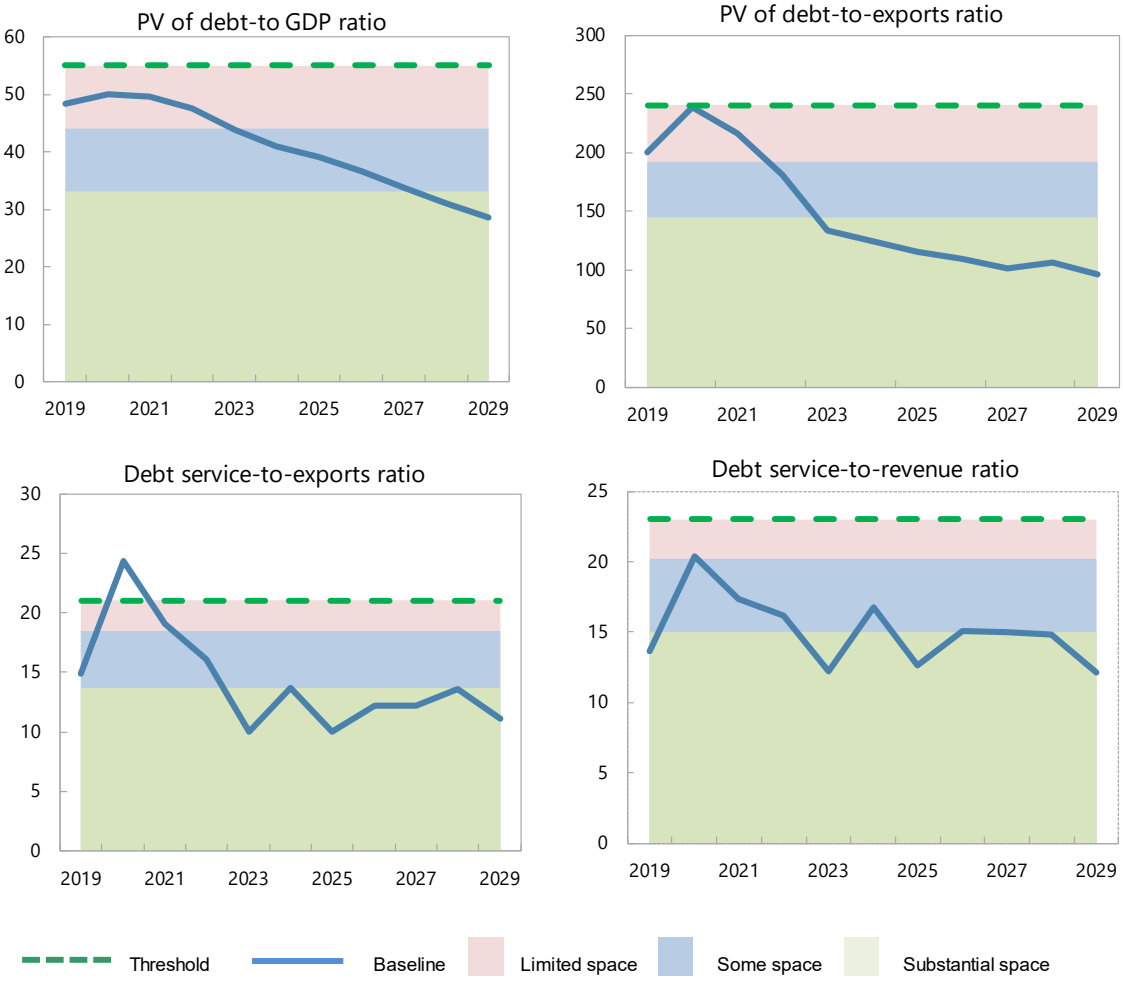
	GFN 1/	EMBI 2/
Benchmarks	14	570
Values	12	470
Breach of benchmark	No	No
Potential heightened liquidity needs	Low	

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



Sources: Senegal authorities; and staff estimates and projections.

Figure 6. Senegal: Qualification of the Moderate Category, 2019-29[1]



Sources: Senegal 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.