INTERNATIONAL MONETARY FUND

# SENEGAL

## REQUEST FOR A THREE-YEAR POLICY COORDINATION INSTRUMENT—DEBT SUSTAINABILITY ANALYSIS[1]

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Approved By
**Annalisa Fedelino and Maria Gonzalez (IMF), and Marcello Estevão (IDA)**

Prepared by the staffs of the International Monetary Fund and the International Development Association


| **Senegal<br>Joint Bank-Fund Debt Sustainability Analysis** | |
|---|---|
| **Risk of external debt distress** | *Moderate* |
| **Overall risk of debt distress** | *Moderate* |
| **Granularity in the risk rating** | *Limited shock absorption space in the short run and substantial space over the long-run* |
| **Application of judgment** | *No* |


*Compared with the January 2019 DSA, Senegal's risk of debt distress (external and overall) has moved from low to moderate, reflecting a significant shift in the composition of public debt towards non-concessional external debt, including to fund investments to develop the hydrocarbon sector. As a result, the DSA shows more significant and prolonged breaches of the thresholds under the stress tests for three out of four key external debt ratios, driven by higher external debt service. Although the country has limited space to absorb shocks in the near term, it maintains substantial space for borrowing over the long run. The moderate risk of debt distress is predicated on adherence to the planned fiscal consolidation path, an acceleration of reforms, and a prudent borrowing strategy, especially over the medium term, as reflected in the authorities' Program Statement. Looking ahead, addressing fiscal risks from the broader public sector, including the energy sector, will be critical to anchor debt sustainability.*


[1]This DSA has been prepared following the revised LIC-DSA framework. It updates the previous Joint DSA (IMF Country Report No. 19/27). Senegal's debt carrying capacity, calculated based on the April and October 2019 WEOs 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.

# BACKGROUND

1. **Compared with the previous DSA (the January 2019 DSA, based on the end-2017 stock of public debt), the current DSA uses the end-2018 public debt stock as a starting point.** Like the January 2019 DSA, the current DSA continues to use the broader coverage of the public sector, which is deemed comprehensive as debts from 26 major parastatals and SOEs are included (Box 1). During 2018, the public sector debt-to-GDP ratio slightly increased to 61.4 percent inclusive of the 2018 budget overfinancing (1.6 percent of GDP) initially put in an escrow account to meet the 2019 financing needs. However, the composition of new borrowing changed markedly, driven by large Eurobond issuances, and a decline in the share of domestic debt as the government refrained from issuing on the regional bond market during the year. The change in debt composition is also characterized by a rapid and unanticipated increase in the share of short-term external borrowing as the government resorted to two bridge loans—CFAF 125 billion to finance the one-off government transfer to the state-owned electricity utility, Senelec, and CFAF 150 billion for liquidity needs. Combined with the introduction of additional financing (compared with the last DSA) for Petrosen's full investment for the development of oil and gas projects (Box 2 below) this has led to a significant increase in external debt service starting in 2020 compared with past projections. The rebasing of GDP in 2018 on the contrary contributed to lowering the debt-to-GDP ratio

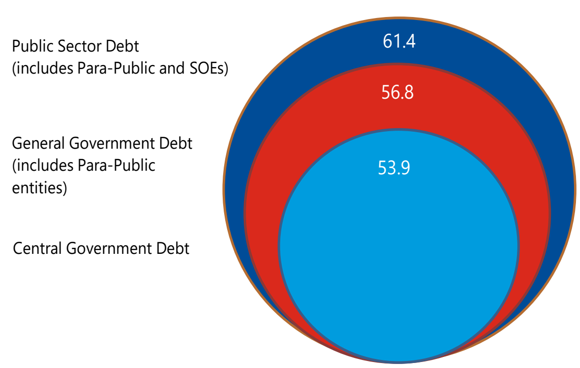
## Box 1. Coverage of Public Sector Data in the DSA

This DSA, similar to the previous one, is based on a broader coverage of the public sector. The public sector includes the (i) central government, (ii) para-public entities which are part of the general government, and (iii) SOEs.

Total public debt data, including debt of para-public entities and SOEs, are provided by the authorities. Revenue and expenditure data on para-public entities and SOEs are derived from technical assistance (TA) reports from the Statistics and Fiscal Affairs Departments of the IMF. Combining the central government deficit of 3.3 percent of GDP with data from other public-sector entities, puts the 2016 public sector deficit at 1.4 percent of GDP. The implementation of the ambitious *Plan Senegal Emergent* (PSE) investment program widened the overall public-sector deficit to 2.5 percent of GDP in 2017 and to 4.6 percent of GDP in 2018. The expanded coverage of debt brought the end-2017 debt stock to 61.2 percent of GDP, including central government debt of 50 percent of GDP. In 2018, the debt to GDP ratio slightly increased to 61.4 percent of GDP, with external debt standing at about 48.5 percent of GDP compared with 39.8 percent in 2017, inclusive of the loans from the regional development bank (BOAD), which has been reclassified as domestic debt in 2018.[1]

The authorities remain committed to tackling public debt data gaps and further improving debt transparency. The expanded coverage of public sector data in this DSA starting in 2017 creates a structural break with historical data.

**Senegal: Total Public Debt, year end 2018**




Sources: Senegalese authorities; and staff estimates.

[1]Applying the same reclassification to the 2017 debt stock would lower the external debt-to-GDP ratio to about 46.5 percent.

**2. Overall, several key factors have contributed to the rapid public sector debt build-up over recent years.** They include: (i) accelerated public spending, particularly in 2017-18; (ii) below-the-line treasury spending; and, more recently, (iii) the inclusion of debt from SOEs such as Senelec and Air Senegal for one-off significant investments; and (iv) significant non-concessional external borrowing.

**3. As SOEs' debts are mostly covered by the DSA, the contingent liability stress test accounts for risks from ongoing PPPs and financial markets**. The value of PPPs, estimated at about 6-7 percent of GDP (as in the January 2019 DSA), raises the contingent liability shock by 2 percent of GDP (corresponding to 35 percent of the total PPP stock). Contingent liabilities from financial markets are set at the minimum value of 5 percent of GDP, which represents the average cost to the government of a financial crisis in a LIC since 1980 (Table 1).

## Table 1. Senegal: Coverage of Public Sector Debt and Design of the Contingent Liability Stress Test

| | Subsectors of the Public Sector | Sub-sectors covered |
|---|---|---|
| 1 | Central government | X |
| 2 | State and local government | X |
| 3 | Other elements in the general government | |
| 4 | o/w: Social security fund | |
| 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) | X |
| 8 | Non-guaranteed SOE debt | X |

| | | | | |
|---|---|---|---|---|
| 1 | The country's coverage of public debt | The central, state, and local governments plus extra budgetary funds, central bank, government-guaranteed debt, non-guaranteed SOE debt | | |
| | | Default | Used for the analysis | Reasons for deviations from the default settings |
| 2 | Other elements of the general government not captured in 1. | 0 percent of GDP | 0.0 | |
| 3 | SOE's debt (guaranteed and not guaranteed by the government) 1/ | 2 percent of GDP | 0.0 | |
| 4 | PPP | 35 percent of PPP stock | 2.1 | PPP capital stock of 6 percetn of GDP is larger than 3 percent threshold |
| 5 | Financial market (the default value of 5 percent of GDP is the minimum value) | 5 percent of GDP | 5.0 | |
| | Total (2+3+4+5) (in percent of GDP) | | 7.1 | |

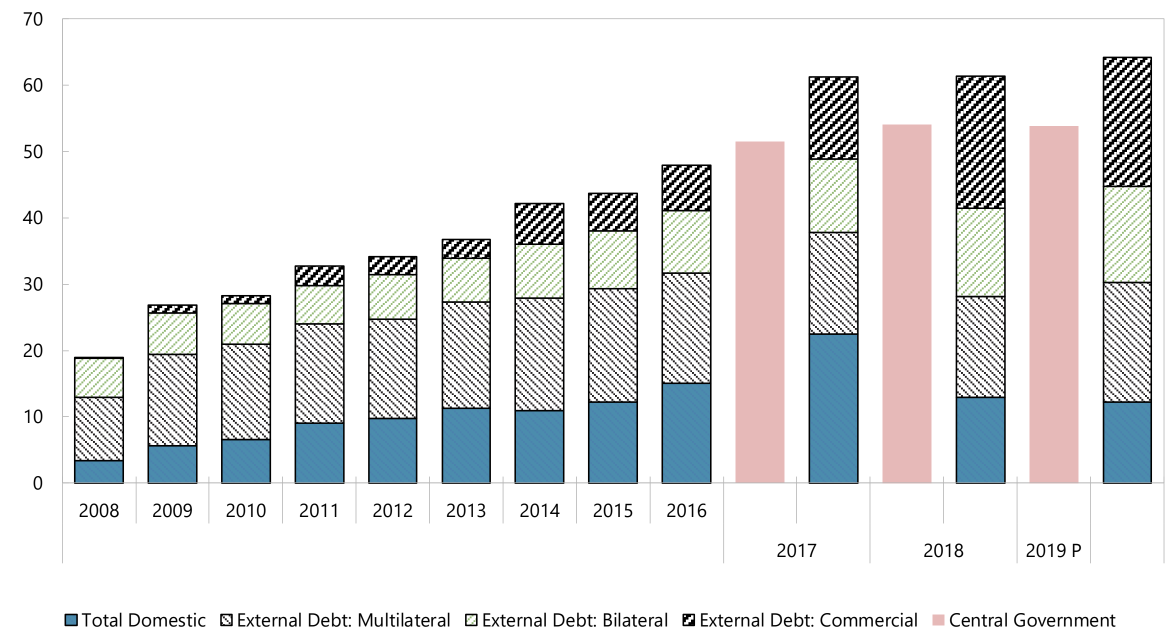
1/ The default shock of 2% of GDP will be triggered for countries whose government-guaranteed debt is not fully captured under the country's public debt definition (1.). If it is already included in the government debt (1.) and risks associated with SOE's debt not guaranteed by the government is assessed to be negligible, a country team may reduce this to 0%.

**4. Senegal's external public debt stock stood at 48.5 percent of GDP as of end-2018.**[2] This represents an increase of over 8 percentage points compared to 2017, and mostly reflects the issuance of a US$2.2 billion Eurobond in March 2018, Senegal's largest ever and amounting to twice the previous issuance of US$1.1 billion in 2017. A part of the proceeds was used to buy back 40 percent of the 2021 bullet payment on the US$500 million Eurobond issued in 2011. Senegal's Eurobond issuance helped create space in the regional bond market for WAEMU countries without access to international markets, and, combined with substantial Eurobond issuance by Côte d'Ivoire, supported the build-up of WAEMU pooled reserves, which had fallen in 2016.

[2] In this DSA, external debt is defined based on currency rather than residency.

**5. Both Eurobond issuances substituted, to a large extent, for borrowing on the regional market**. As a result, domestic debt declined from about 21 percent of GDP at end-2017 to 13 percent of GDP at end-2018, leading to significant changes in the composition of public debt (Figure 1).

**Figure 1. Senegal: Public Sector Debt, 2008-19[1]**
(Percent of GDP)



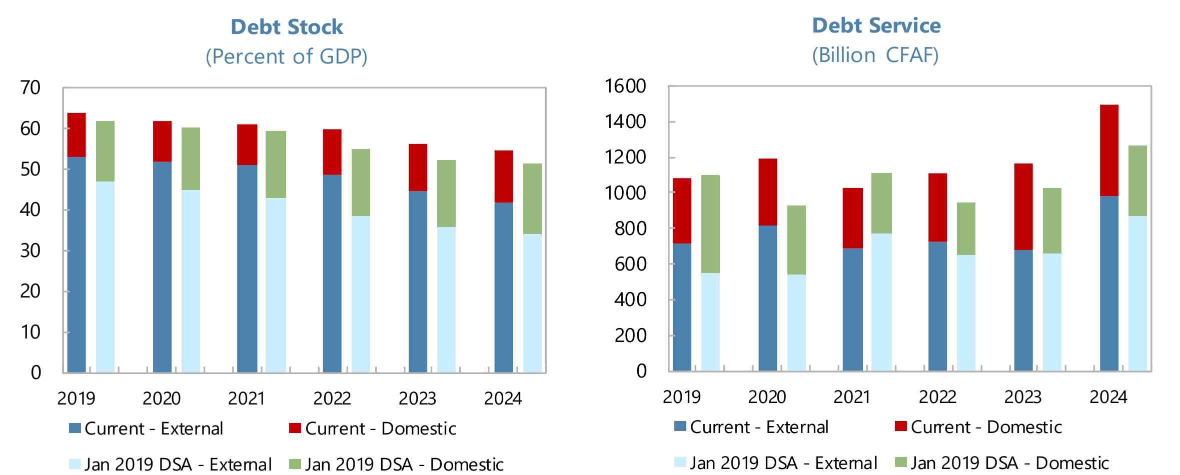

Sources: Senegalese authorities; and staff estimates and projections.
1/ Total debt refers to central government debt until 2016, and public sector debt from 2017 onwards. The pink bars show central government debt for the years 2017-19.
Source: Staff estimates.

**6. Recent developments point to a further increase in the external public debt ratio for 2019.** External public debt is projected at 53.5 percent of GDP (47.2 percent in the previous DSA), and total public debt is projected to reach 63.7 percent in 2019. The increase reflects higher financing requirements owing to the need for the Treasury to finance: (i) the reduction in the end-2018 outstanding balance in below-the-line *comptes de dépôt*; (ii) the payment of pre-2019 Senelec arrears as part of the World Bank-supported plan to restore the company's financial viability, which was financed through a short-term external commercial loan of CFAF 125 billion (see Annex III in Senegal Request for a three year Policy Coordination Instrument); (iii) larger-than-previously-anticipated investments in Petrosen for the oil and gas projects; (iv) the purchasing of airplanes by Air Senegal; and (v) a syndicated loan of CFAF 150 billion for other treasury operations. The authorities intend to refinance this loan in the regional CFA bond market with a longer maturity. Domestic debt is estimated to decline further to about 10 percent of GDP at end-2019, as most of the borrowing to finance these major projects is external.

**7. External debt service has increased recently, and total public debt service remains sizeable**. The ratio of public external debt service to exports increased from about 9 percent in 2017 to 17.5 percent in 2018 and is estimated at 18.5 percent in 2019 Public external debt service to revenue increased from about 8 percent in 2017 to 15.6 percent in 2018 and is estimated at 16 percent in 2019. Total public debt service, estimated at about 28 percent of total revenue (including grants) in 2019, reflects the increased resort to non-concessional borrowing in the last two years.

**8. Overall, the increase in the share of non-concessional external debt and implications on debt service explain, for a large part, the difference between the current and the previous DSA.** Domestic debt represented about one third of total debt in 2017, the base year in the previous DSA. However, at end-2018 (the base year for the current assessment), the share of domestic debt stood at 20 percent of total public debt (Figure 2). The dynamics of debt service have thus significantly changed in the current assessment as compared with the previous DSA (Figure 2).

**Figure 2. Senegal: Debt Stock and Debt Service, 2019-24**




Sources: Senegalese authorities; and staff estimates and projections.

# UNDERLYING ASSUMPTIONS AND BORROWING PLAN

**9. The DSA is consistent with the macroeconomic framework outlined in the staff report.** In line with the previous DSA, the baseline scenario assumes the implementation of sound macroeconomic policies, structural reforms, and an ambitious investment plan, as outlined in the PSE II. It is also assumed that Senegal's central government fiscal deficit remains at 3 percent of GDP over the long term, consistent with WAEMU convergence criteria. The main macroeconomic assumptions are as follows:

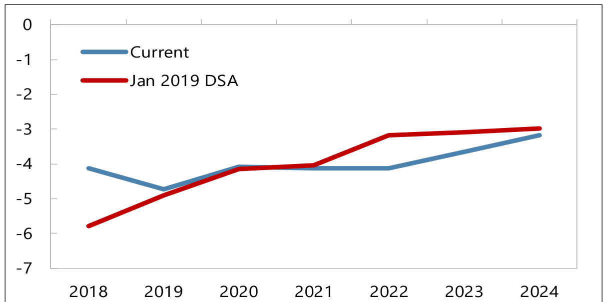
- **Natural resources**. The current framework assumes the implementation of two large off-shore oil and gas projects (GTA and SNE projects), including pre-production investment and borrowing with first production and export of oil and gas expected in 2022. Full investments for phase I as well as expected investments for phases II and III for both projects were added, along with the projected impact of these investments on GDP growth, exports and government revenues. *While the previous DSA considered only partial investments of US$600 million equally split over three years for the phase I of SNE and GTA, the current DSA considers all three phases for* *both projects. For GTA, total capital expenditure is estimated at $1,452 million, spread over the period 2020-26. For SNE, the equivalent number is $1,641 million over the period 2020-32* (Box 2).

- **Real GDP growth** is estimated at 6 percent in 2019, increasing to 6.8 percent in 2020, *compared with 6.9 and 7.5 respectively in the previous DSA,* reflecting a slow-down in economic activity around the February 2019 elections and the negative impact of unpaid government obligations in the construction sector. The growth rate peaks at 11.6 percent in 2023, decelerating to 8 percent in 2024, reflecting the incorporation of oil and gas production. Thus, medium-term projections of real GDP growth (7.9 percent) are more optimistic than historical averages (4.8 percent) but more aligned with recent outcomes in 2016-18, implying that the growth take-off is projected to continue, conditional on reforms being implemented and materialization of expected returns on investment. Over the long run, real GDP growth is projected to slow down, averaging 5.1 percent over the period 2025-39 (slightly above the historical average) *and unchanged compared with the previous DSA*. This is in line with international experience that suggests that, over a long period of time and as economies converge to middle income status, the real GDP growth rate slows down.

- **Inflation**. Inflation is projected to remain contained at under 2 percent in 2019 The GDP deflator is projected at 1.1 percent in 2019 and is expected to hover around 2 percent over the medium term.

**Figure 3. Public Sector Fiscal Deficit, 2018-24**

(Percent of GDP)




Sources: Senegalese authorities; and staff estimates and projections.

- **Fiscal deficit**. The public sector deficit is projected at about 4.7 percent of GDP in 2019 (owing to Petrosen and Air Senegal investments) and 4.3 percent of GDP over the medium term, still reflecting large Petrosen investments (Figure 3). *This medium-term deficit is somewhat larger than assumed in the previous DSA (3.7. percent of GDP), mainly owing to the higher investments in oil and gas (Box 2).* In the long run, the deficit is set at about 2.7 percent of GDP, *broadly unchanged from the previous DSA*, incorporating some efforts to improve the financial performance of SOEs (Table 2).

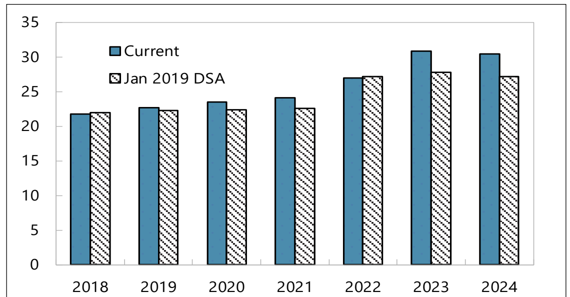
- **Gross financing needs**. In line with the rise in the deficit, average gross financing needs over the medium-term in the current DSA increase and stand at about 9 percent of GDP *compared to 7.5 percent in the previous one*.

- **External financing mix and terms**. The DSA assumes that the financing mix will be 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 current DSA also includes the two external bridge loans— CFAF 125 billion for Senelec and CFAF 150 billion syndicated loan—contracted in 2019 and repayable in 2020*. However, consistent with the authorities' debt management strategy, the refinancing of at least CFAF 150 billion through issuance of bonds on the regional market is also included. The authorities have already obtained the BCEAO's authorization to place an additional amount of up to CFAF 275 billion in 2019 and there appears to be significant liquidity in this market (the recent bond issuance by Senegal was oversubscribed by 300 percent). Even though recent borrowing has seen an increased reliance on non-concessional borrowing, the average maturity of new debt is assumed to remain close to 17 years, with 6-year grace period and an average interest rate of 4 percent, broadly unchanged compared to the previous DSA which had a 7-year grace period and 4 percent average interest payment.

- **Domestic borrowing.** Domestic financing is assumed to account on average for about 35 percent of total financing over 2019-24; about 10 percent of which has maturity below one year. New medium- and long-term domestic debt has an average maturity of 5 years, with some SOE debt benefiting from a grace period.

- **Exports**. Exports of goods and services are estimated at about 23 percent of GDP in 2019 and projected to average about 27 percent over the medium term compared respectively to about 22 percent and 24 percent in the last DSA (Figure 4). Over the long run, exports are expected to average 31 percent of GDP compared to 28 percent in the last DSA.

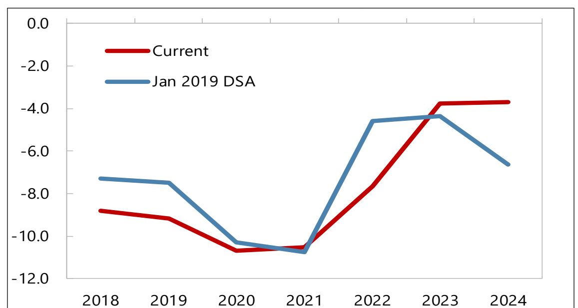
**Figure 4. Exports of Goods and Services, 2018-24**
(Percent of GDP)




Sources: Senegalese authorities; and staff estimates and projections.

- **Current account deficit**. The current account deficit in 2018 was higher than anticipated in the previous DSA (8.8 percent of GDP actual compared with a projection of 7.3 percent of GDP), and is projected to stay elevated in 2019 (9.2 percent of GDP compared with a previous projection of 7.5 percent of GDP) due to an increase in imports of capital goods and oil, and their related services. The current account deficit is projected to remain elevated through 2021 due to oil and gas investment in the pre-production period (Figure 5). Over the long term, the average current account deficit is projected to converge to1.1 percent of GDP (compared to1.2 percent in the last DSA) due to improved export growth, including from the oil and gas sector and the ongoing export-oriented investments in the Special Economic Zones (SEZs). Remittances remain a significant component of the current account but are expected to decline as a percent of GDP over the medium term.

**Figure 5. Current Account Deficit, 2018-24**
(Percent of GDP)




Sources: Senegalese authorities; and staff estimates and projections.

- **Discount rate**. The discount rate for this DSA is set at 5 percent, *as for the previous one.*

## Box 2. Oil and Gas—Petrosen Borrowing Assumptions

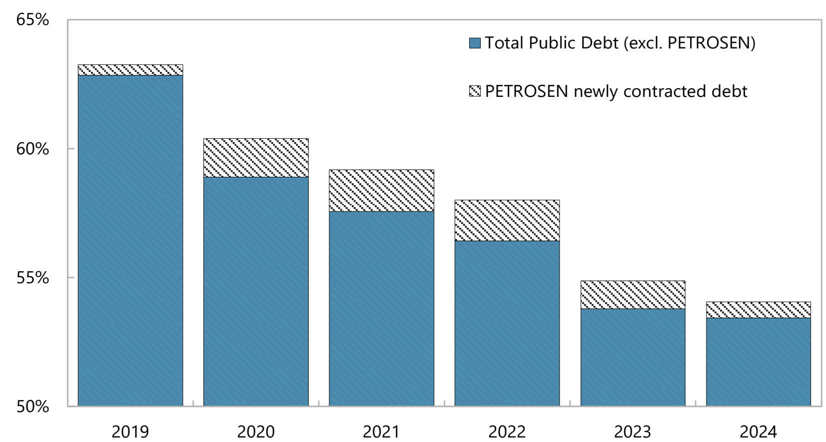
The Senegalese National Oil Company, Petrosen, was created in May 1981 to serve as the implementing agency for the State's petroleum policy. Petrosen is under the supervision of the Ministry in charge of the energy sector. In collaboration with the Ministry, it prepares and negotiates all petroleum conventions and contracts. The SNE deep-water oil field is expected to be Senegal's first offshore oil development. The field is located within the Sangomar Deep Offshore permit area, approximately 100 kilometers south of Dakar. The gas project consists of about 15 trillion cubic feet estimated recoverable in a high-quality reservoir at a 2,850 meters water depth (Greater Tortue Ahmeyim-GTA) and is exploited jointly with Mauritania.

The oil and gas sector development for both SNE and GTA comprises three phases and the state-owned enterprise Petrosen's investments for the first phase amount to US$1,140 million with US$425 million for GTA and US$715 million for SNE. This DSA updates the last DSA—which only partially considered the first phase (US$600 million)—by not only accounting for the full phase I investments, but also by considering investments for the remaining two phases. The total Petrosen investment for GTA across the three phases is estimated at US$1,452 million, with the equivalent for SNE being US$1,641 million (see Text Table for the spread of these investments across time).

**Senegal: Total Public Debt, 2019-31**

| | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BASELINE | | | | | | | | | | | | | |
| | | | | | | | (CFAF Billions) | | | | | | |
| Petrosen Borrowing Assumption | 59 | 226 | 265 | 287 | 224 | 140 | 111 | 47 | 77 | 75 | 83 | 78 | 57 |
| Total Public External Debt (excl. Petrosen) | 7,416 | 7,606 | 8,107 | 8,496 | 8,933 | 9,398 | 9,754 | 10,024 | 10094 | 10143 | 10154 | 10400 | 10636 |
| **Total Public External Debt** | **7,475** | **7,832** | **8,372** | **8,783** | **9,156** | **9,538** | **9,865** | **10,071** | **10171** | **10218** | **10236** | **10478** | **10693** |
| **Total Public Debt** | **8,904** | **9,337** | **9,983** | **10,738** | **11,514** | **12,423** | **13,326** | **14,238** | **15257** | **16353** | **17555** | **18854** | **20238** |
| | | | | | | | (Percent of GDP) | | | | | | |
| Petrosen Borrowing Assumption | 0.4 | 1.5 | 1.6 | 1.6 | 1.1 | 0.6 | 0.5 | 0.2 | 0.3 | 0.2 | 0.3 | 0.2 | 0.2 |
| Total Public External Debt (excl. Petrosen) | 53.0 | 50.4 | 49.4 | 47.2 | 43.4 | 41.4 | 40.0 | 38.2 | 35.7 | 33.5 | 31.2 | 29.6 | 28.1 |
| **Total Public External Debt** | **53.5** | **51.9** | **51.0** | **48.8** | **44.5** | **42.0** | **40.4** | **38.4** | **35.9** | **33.8** | **31.5** | **29.8** | **28.3** |
| **Total Public Debt** | **63.7** | **61.9** | **60.8** | **59.6** | **56.0** | **54.7** | **54.6** | **54.3** | **53.9** | **54.1** | **54.0** | **53.6** | **53.6** |

**Senegal: Public Sector Debt - impact of Petrosen investment[1]**
(Percent of GDP)




Sources: Senegalese authorities; and IMF staff calculations.
[1] Petrosen loans are assumed to be contracted for a 10-year period, at 7 percent interest per annum, with a 4 year grace period (hence amortization would start in 2024, but would be quite low).

**10. The realism of the macroeconomic framework is confirmed by several checks** (Figure 9). The nature of projected medium-term debt-creating flows is similar to that of the historical outturns. The projected fiscal adjustment for the next three years is well below the top quartile of the distribution of approved Fund-supported programs for LICs since 1990. The assumed fiscal consolidation plans are consistent with the WAEMU regional fiscal deficit convergence criterion of 3 percent of GDP, to which the authorities have committed. Regarding the relation between fiscal adjustment and growth paths, the baseline projection does not deviate significantly in 2020 from the growth paths with LIC's typical fiscal multipliers extracted from the empirical literature. The contribution of government capital to real GDP growth is conservative and remains in the order of the historical magnitudes.

**Table 2. Senegal: Evolution of Selected Macroeconomic Indicators, 2016-19**

| | 2016 | 2017 | 2018 | 2019 | Med. term[1] | Long term[2] |
|---|---|---|---|---|---|---|
| Real GDP growth | | | | | | |
| Current DSA | 6.4 | 7.1 | 6.7 | 6.0 | 7.9 | 5.1 |
| Previous DSA | 6.2 | 7.2 | 6.2 | 6.9 | 8.3 | 5.1 |
| Overall fiscal deficit (percent of GDP) | | | | | | |
| Current DSA[3] | 3.3 | 2.5 | 4.1 | 4.7 | 4.0 | 2.4 |
| Previous DSA[4] | 3.3 | 2.8 | 5.1 | 4.3 | 3.7 | 2.8 |
| Current account deficit (percent of GDP) | | | | | | |
| Current DSA | 4.0 | 7.3 | 8.8 | 9.2 | 7.6 | 1.2 |
| Previous DSA | 4.0 | 7.3 | 7.3 | 7.0 | 7.5 | 1.2 |
| Exports of goods and services (percent of GDP) | | | | | | |
| Current DSA | 21.5 | 21.9 | 21.8 | 22.7 | 26.4 | 31.3 |
| Previous DSA | 21.5 | 21.7 | 22.0 | 22.3 | 24.0 | 28.1 |

Sources: Senegalese authorities; and staff estiamtes and projections.
[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.

# COUNTRY CLASSIFICATION AND DETERMINATION OF STRESS TEST SCENARIOS

**11. Senegal's capacity to carry debt remains strong**. Values in the components of the Composite Indicator (CI) score, which reflect 10-year averages, have only changed marginally compared to the previous DSA (Table 3). Thus, thresholds to assess debt sustainability have remained unchanged compared to the previous DSA. The main contributors to the score are the CPIA value, reflecting quality of institutions and policies, and import coverage of reserves.

**12. Stress tests follow standardized settings, with the addition of a market financing shock.** The standardized stress tests apply the default settings, while the contingent liability stress test is based on the quantification of contingent liabilities discussed above. The market financing shock is the only tailored stress test that applies to Senegal due to an outstanding Eurobond. The test assumes a temporary increase in the cost of new commercial external borrowing by 400 basis points combined with a nominal depreciation of 15 percent of the CFAF vis-à-vis the US$ and a shortening of maturities and of grace periods.[3]

**Table 3. Senegal: Debt Carrying Capacity**

| Components | Coefficients (A) | 10-year average values (B) | CI Score components (A*B) = (C) | Contribution of components |
|---|---|---|---|---|
| CPIA | 0.385 | 3.818 | 1.47 | 44% |
| Real growth rate (in percent) | 2.719 | 7.598 | 0.21 | 6% |
| Import coverage of reserves (in percent) | 4.052 | 39.075 | 1.58 | 47% |
| Import coverage of reserves^2 (in percent) | -3.990 | 15.269 | -0.61 | -18% |
| Remittances (in percent) | 2.022 | 10.587 | 0.21 | 6% |
| World economic growth (in percent) | 13.520 | 3.559 | 0.48 | 14% |
| CI Score | | | 3.34 | 100% |
| CI rating | | | Strong | |

Source: Staff estimates.

# EXTERNAL DSA

**13. The external debt indicators remain below their thresholds under the baseline scenario—with the exception of the debt service-to-export ratio—and are projected to be on a downward path over the medium term** (Figure 6). Public external debt service to revenue is projected to peak at about 20 percent in 2020 before reversing trend. Public external debt service to exports is projected to reach a peak of about 23 percent in 2020 before declining in subsequent years. While other debt indicators remain well below their thresholds, the debt service-to-exports ratio exceeds its threshold once (during 2020) by a small margin (about 2 percentage points), reflecting mainly the repayment of the non-refinanced portion (CFAF 125 billion CFA) of the two bridge loans contracted in 2019 on top of, among other elements, the Eurobond debt service of more than CFAF 125 billion.[4] The breach under the baseline

[3] The considered shortening of maturities of commercial external borrowing are as follows. If the original maturity is greater than 5 years, the new maturity is set to 5 years. If the original maturity is less than 5 years, the new maturity is shortened by 0.7 years.

[4] Compared to the previous DSA, this is much higher as the full bullet repayment of the 2011 Eurobond, originally scheduled for 2021, has been reprofiled and spread across three years 2020-22.

is temporary in nature (one year) and according to the LIC DSF guidance note does not affect the risk rating. In the previous DSA this same ratio was about 7 percentage points below its threshold in 2020. The present value of public and publicly guaranteed (PPG) external debt is estimated at about 46 percent of GDP in 2019 and is projected to decline to about 38 percent of GDP in 2024 and 25 percent on average in the long term (well below the 55 percent threshold). This baseline scenario assumes good progress on reforms, where the government continues to take measures to sustain growth and guarantee the efficiency of public investment. However, the historical scenario in the DSA provides an illustration of how lack of progress on reforms and a return to the low growth of the past would put debt on an upward and unsustainable path (Figure 6). Under this scenario,[5] most indicators would breach their respective thresholds over the medium to long term. The historical scenario highlights the importance of steadfast implementation of structural reforms to sustain high growth.

**14. All debt indicators exceed their thresholds—albeit for a short period of time— under the stress tests.** All four of public and publicly guaranteed external debt burden indicators breach their threshold under the stress tests in 2020 but for a short period of time (three years maximum). All the breaches are relevant towards determining the rating with the exception of the breach of the debt service-to-revenue ratio, which experiences only a short-lived breach of one year under the simulation of a depreciation of the exchange rate. In addition, such a shock is unlikely to materialize given the CFA franc peg. Concerning the other three debt indicators, the most extreme shock is the export shock for both debt-to-exports and debt service-to-exports ratios, while the combination shock would be the worst shock for the PV of debt-to-GDP ratio. The largest deviations are recorded for the debt service-to-export ratio and the debt-to-exports ratio, which peak at about 26 percent in 2020 and about 310 percent in 2021, respectively (i.e., close to 30 percent above their thresholds). The tailored market financing risk stress tests causes the debt service-to-export ratio to breach its threshold in 2020 reaching 23 percent (Figure 10).

**15. The external debt developments put Senegal at a moderate risk of external debt distress.** Even when taking into account certain factors that have influenced Senegal's debt dynamics, such as: (i) GDP rebasing, (ii) active liability management (the repurchase of 40 percent of the 2011 Eurobond in 2018 and the resulting reduction in the 2021 bullet repayment spike), and (iii) introduction of oil and gas-related production and revenues starting in 2022 and the related higher exports and GDP growth—the debt indicators still display noticeable deteriorations compared with the previous DSA, pointing to the moderate risk of debt distress. The results are robust to several alternative hypotheses, including a scenario where half of Petrosen financing would go through project finance and that portion is removed from the DSA calculations after the construction period of each phase.

**16. This change in rating results from a combination of factors affecting both the numerator and the denominator of key debt ratios.** With the previous DSA risk of debt distress rating already considered to be low but "borderline" medium, the continued increase in debt, particularly the tilt towards non-concessional external debt, and the deterioration of some short-term macroeconomic indicators (such as the fiscal and the current account deficits and real GDP growth) compared with previous projections

[5] It simulates the incidence of a non interest current account deficit and FDI stabilizing at - 5.4 percent of GDP and 1.8 percent, respectively; and real GDP and GDP deflator would grow at 4.8 percent and -1.2 percent, respectively.

explain the change in rating. Compared to the last DSA, average debt service over 2019-24 has increased by about 19 percent (Figure 2). The country has limited space to absorb shocks in the near term, but it has substantial space for borrowing over the long run (Figure 11).

# PUBLIC DSA

**17. Indicators of overall public debt and debt service point to moderate vulnerabilities.** The debt-to-GDP ratio displays a downward trend starting in 2020, which accelerates in 2023 as hydrocarbon production intensifies and nominal GDP increases. The net present value of total public debt is projected to decline from 57 percent in 2019 to 49 percent of GDP by 2039, remaining well below its benchmark of 70 percent (Figure 7 and Table 5). Under the most extreme stress test, a shock to GDP growth results in a prolonged breach of the threshold, but the stress test may overstate the magnitude of the debt vulnerability in the case of Senegal because the sizable permanent increase in the primary deficit created by the standardized simulation is not consistent with Senegal's stated fiscal policy or historical data—a conclusion that will only be reinforced by the advent of oil and gas revenues from 2022 onwards. [6] Under the historical scenario, the PV of total public debt is on an upward trend, highlighting the risk that insufficient reforms, and related low growth, represent for public debt dynamics. Overall, risks to public debt sustainability are moderate, but stress tests underline the importance of making continuous efforts to reduce the fiscal deficit, including through strong private sector-led growth and subsequently increasing revenues, as well as strictly controlling the volumes and terms of non-concessional borrowing.

**18. The public DSA highlights vulnerabilities related to debt service.** Debt service is estimated to decline from about 39.5 percent of total revenues in 2018 to about 28 percent of total revenues in 2019 as the performance of revenue collection improves. It is projected to decline further to an average of 23 percent during 2020-2028 as the improvement in revenue collection continues, gross financing needs decrease, and some large Eurobonds mature. Despite the decline, debt service continues to absorb a sizable portion of fiscal revenues, thus limiting room for other expenditures in critical areas such as infrastructure investment, health, and education. As in the external DSA, this illustrates the importance of implementing key policies and reforms both to control spending and mobilize additional revenues to finance economic development in a sustainable manner.

# RISKS TO THE ASSESSMENT

**19. Risks to the assessment are balanced**. On the upside, additional mining revenue and higher-than-anticipated gas exports could boost exports, government revenue and growth further. On the downside, the slowdown observed in the first half of 2019 could prove more protracted, especially if private investment fails to pick up. Slippages on structural reforms to improve the business environment or on fiscal consolidation—including clearing unmet government obligations to suppliers—could worsen the

[6] The public sector debt to GDP breach of the threshold under a shock to GDP has a large and sustained effect throughout the projection period by creating a large permanent increase in the primary deficit—about 4 percentage points of GDP higher than the baseline in 2021 and beyond. The historical scenario is well below the most extreme shock scenario and the primary balance shock does not result in breaches of the debt ratio, providing further evidence that the risks associated with the most extreme scenario may be overstated in the case of Senegal.

debt situation. Additional investment needs and/or delays in the start of, or changes in oil and gas production could affect the profile of hydrocarbon revenues. On the external front, terrorism and large swings in energy prices could weigh on growth and the overall assessment.

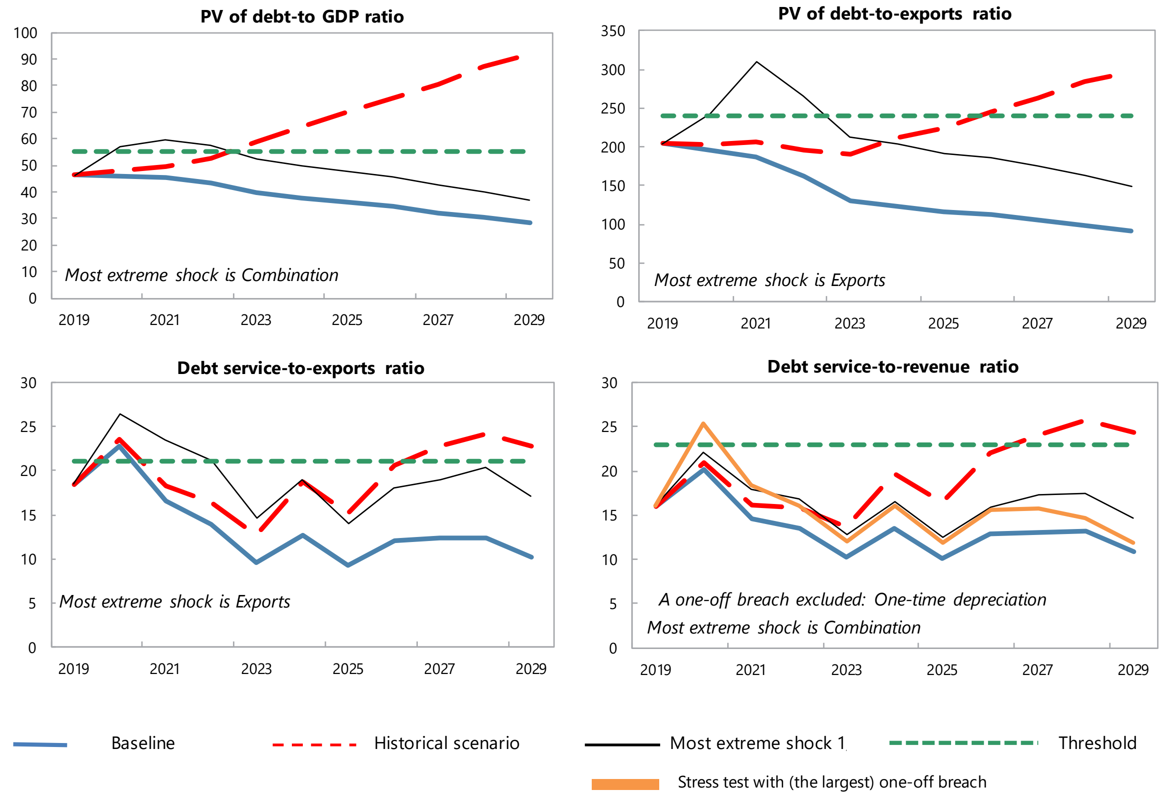
# CONCLUSION

**20. Senegal's risk of debt distress has moved from low to moderate mainly owing to the temporary large investments in hydrocarbon production and a significant shift in debt composition toward non-concessional external debt, but with substantial borrowing space over the long run**. Most of the debt indicators breach their thresholds under the stress tests. The current projections highlight that rising levels of debt and debt service—particularly for external debt— require a cautious approach to commercial borrowing. Debt service ratios are projected to remain somewhat high despite their decline over the medium term, signaling that a further deterioration in borrowing terms could increase debt-related vulnerabilities. On the other hand, full implementation of the authorities' fiscal policies anchored by the WAEMU convergence criteria, together with careful debt management, would lead to favorable debt dynamics. In this context, staff recommends a careful and continuous monitoring of financing needs and borrowing plans, the development of a transparent pipeline of bankable projects, and a strengthening of debt management. In particular, enhanced coordination between the Ministry of Finance and Budget and the Ministry of Economy, Planning and Cooperation on assessing new external financing options would be important. To minimize borrowing costs and reduce risks associated with external debt, greater resort to regular issuances on the regional bond market would be helpful.

**21. The authorities are committed to reduce debt ratios over the medium term.** They aim to achieve this through further fiscal consolidation, improvements in the current account and a strengthening of debt management policies—including more attention to the terms and volume of non-concessional external financing. Address fiscal risks from the broader public sector, including the energy sector, will also be important.

**22. Authorities' view.** The authorities emphasized that public borrowing had allowed to provide first-rate infrastructure and, by allowing to develop hydrocarbon production, would deliver significant additional resources to future generations. They noted that they would have preferred the rating to remain low, pointing out that the debt-to-GDP ratio would be on a firm downward trajectory after 2019. They also stressed that they were committed to limit non-concessional borrowing and concurred with staff on the need for a prudent debt management strategy. They plan to continue efforts to expand the coverage of public sector debt.

## Figure 6. 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.

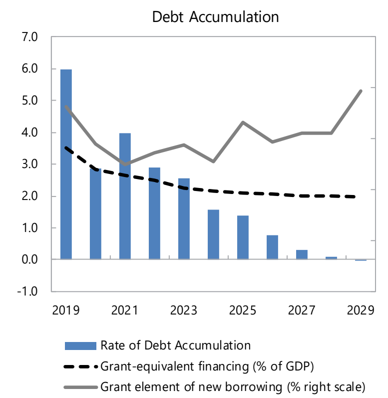
2/ The magnitude of shocks used for the commodity price shock stress test are based on the commodity prices outlook prepared by the IMF research department.

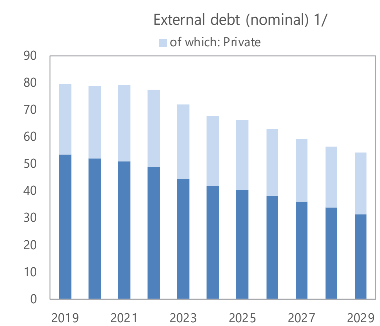
# Table 4. Senegal: External Debt Sustainability Framework, Baseline Scenario, 2016-39

(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/** | **56.1** | **65.1** | **70.2** | **79.6** | **79.0** | **79.1** | **77.5** | **71.9** | **67.5** | **54.2** | **41.6** | **53.2** | **68.5** |
| ***of which: public and publicly guaranteed (PPG)*** | **32.4** | **39.8** | **48.5** | **53.5** | **51.9** | **51.0** | **48.8** | **44.5** | **42.0** | **31.5** | **21.3** | **30.1** | **42.9** |
| Change in external debt | -1.2 | 9.0 | 5.1 | 9.4 | -0.6 | 0.1 | -1.6 | -5.6 | -4.4 | -2.1 | -0.9 | | |
| **Identified net debt-creating flows** | **-1.1** | **-0.2** | **-0.9** | **1.3** | **0.9** | **0.8** | **-2.6** | **-8.0** | **-5.5** | **-4.4** | **-2.8** | **3.0** | **-3.1** |
| **Non-interest current account deficit** | **2.6** | **6.1** | **6.8** | **6.7** | **8.1** | **8.2** | **5.3** | **1.6** | **1.5** | **-0.6** | **0.4** | **5.4** | **3.0** |
| Deficit in balance of goods and services | 11.0 | 13.9 | 15.2 | 15.6 | 17.1 | 18.1 | 13.2 | 7.0 | 7.5 | 4.3 | 7.1 | **14.1** | **9.6** |
| Exports | 21.5 | 21.9 | 21.8 | 22.7 | 23.5 | 24.1 | 26.9 | 30.8 | 30.4 | 31.0 | 32.1 | | |
| Imports | 32.5 | 35.8 | 36.9 | 38.2 | 40.6 | 42.2 | 40.1 | 37.8 | 37.9 | 35.3 | 39.2 | | |
| Net current transfers (negative = inflow) | -9.5 | -9.4 | -8.6 | -9.1 | -9.5 | -10.1 | -9.7 | -8.6 | -9.1 | -8.7 | -8.4 | **-9.5** | **-9.1** |
| *of which: official* | -0.4 | -0.4 | -0.1 | -0.2 | -0.2 | -0.3 | -0.3 | -0.3 | -0.2 | -0.2 | -0.3 | | |
| Other current account flows (negative = net inflow) | 1.2 | 1.6 | 0.3 | 0.2 | 0.5 | 0.2 | 1.8 | 3.3 | 3.1 | 3.8 | 1.8 | **0.8** | **2.5** |
| **Net FDI (negative = inflow)** | **-1.3** | **-2.4** | **-2.6** | **-3.7** | **-4.8** | **-4.7** | **-4.3** | **-4.0** | **-4.0** | **-2.6** | **-2.2** | **-1.8** | **-3.8** |
| **Endogenous debt dynamics 2/** | **-2.3** | **-3.9** | **-5.1** | **-1.7** | **-2.4** | **-2.7** | **-3.7** | **-5.6** | **-2.9** | **-1.2** | **-1.0** | | |
| Contribution from nominal interest rate | 1.4 | 1.2 | 2.0 | 2.5 | 2.6 | 2.3 | 2.3 | 2.1 | 2.3 | 1.6 | 0.9 | | |
| Contribution from real GDP growth | -3.4 | -3.6 | -3.9 | -4.2 | -5.0 | -5.0 | -6.0 | -7.8 | -5.2 | -2.8 | -1.9 | | |
| Contribution from price and exchange rate changes | -0.4 | -1.4 | -3.3 | ... | ... | ... | ... | ... | ... | ... | ... | | |
| **Residual 3/** | **-0.1** | **9.2** | **6.0** | **8.1** | **-1.5** | **-0.7** | **1.0** | **2.5** | **1.1** | **2.3** | **1.9** | **0.6** | **1.7** |
| *of which: exceptional financing* | 2.3 | 0.6 | 1.1 | 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** | **...** | **...** | **41.1** | **46.4** | **45.8** | **45.2** | **43.4** | **39.9** | **37.5** | **28.1** | **18.8** | | |
| **PV of PPG external debt-to-exports ratio** | **...** | **...** | **188.7** | **204.5** | **195.1** | **187.6** | **161.2** | **129.5** | **123.4** | **90.8** | **58.6** | | |
| **PPG debt service-to-exports ratio** | **10.4** | **8.9** | **17.5** | **18.5** | **22.7** | **16.5** | **14.0** | **9.5** | **12.7** | **10.2** | **6.2** | | |
| **PPG debt service-to-revenue ratio** | **12.0** | **7.8** | **15.6** | **16.0** | **20.1** | **14.5** | **13.5** | **10.2** | **13.4** | **10.9** | **6.8** | | |
| Gross external financing need (Billion of U.S. dollars) | 0.9 | 1.4 | 2.1 | 2.1 | 2.7 | 2.6 | 1.9 | 0.6 | 1.1 | 0.5 | 0.8 | | |
| **Key macroeconomic assumptions** | | | | | | | | | | | | | |
| Real GDP growth (in percent) | 6.4 | 7.1 | 6.7 | 6.0 | 6.8 | 7.0 | 8.4 | 11.6 | 8.0 | 5.3 | 4.7 | **4.8** | **6.8** |
| GDP deflator in US dollar terms (change in percent) | 0.7 | 2.6 | 5.3 | -4.2 | 0.7 | 2.9 | 2.3 | 3.3 | 2.3 | 2.0 | 2.0 | **-1.2** | **1.5** |
| Effective interest rate (percent) 4/ | 2.7 | 2.4 | 3.4 | 3.6 | 3.5 | 3.2 | 3.2 | 3.2 | 3.5 | 3.0 | 2.3 | **2.2** | **3.3** |
| Growth of exports of G&S (US dollar terms, in percent) | 2.9 | 12.2 | 11.5 | 5.7 | 11.2 | 13.1 | 23.8 | 31.9 | 9.1 | 8.1 | 7.7 | **4.2** | **12.2** |
| Growth of imports of G&S (US dollar terms, in percent) | -1.8 | 21.3 | 15.8 | 5.1 | 14.1 | 14.5 | 5.4 | 8.5 | 10.7 | 5.4 | 9.5 | **3.2** | **8.0** |
| Grant element of new public sector borrowing (in percent) | ... | ... | ... | 18.1 | 14.4 | 12.4 | 13.6 | 14.4 | 12.8 | 19.7 | 18.0 | **...** | **15.3** |
| Government revenues (excluding grants, in percent of GDP) | 18.5 | 25.1 | 24.4 | 26.1 | 26.5 | 27.4 | 27.9 | 28.7 | 28.8 | 28.9 | 29.1 | **18.1** | **28.2** |
| Aid flows (in Billion of US dollars) 5/ | 0.9 | 1.0 | 1.0 | 0.8 | 0.6 | 0.6 | 0.7 | 0.7 | 0.8 | 1.0 | 1.7 | | |
| Grant-equivalent financing (in percent of GDP) 6/ | ... | ... | ... | 3.5 | 2.8 | 2.7 | 2.5 | 2.2 | 2.1 | 2.0 | 1.7 | **...** | **2.4** |
| Grant-equivalent financing (in percent of external financing) 6/ | ... | ... | ... | 33.2 | 34.7 | 33.4 | 37.6 | 41.7 | 38.9 | 54.2 | 52.2 | **...** | **41.6** |
| Nominal GDP (Billion of US dollars) | 19 | 21 | 23 | 24 | 26 | 28 | 31 | 36 | 40 | 57 | 112 | | |
| Nominal dollar GDP growth | 7.1 | 10.0 | 12.3 | 1.6 | 7.5 | 10.0 | 10.8 | 15.3 | 10.4 | 7.4 | 6.8 | **3.5** | **8.4** |
| **Memorandum items:** | | | | | | | | | | | | | |
| PV of external debt 7/ | ... | ... | 62.8 | 72.5 | 72.8 | 73.3 | 72.1 | 67.3 | 63.1 | 50.8 | 39.1 | | |
| In percent of exports | ... | ... | 288.5 | 319.7 | 310.5 | 304.2 | 268.0 | 218.5 | 207.3 | 164.0 | 121.8 | | |
| Total external debt service-to-exports ratio | 14.6 | 13.0 | 21.6 | 23.2 | 28.8 | 21.9 | 17.9 | 13.1 | 17.0 | 13.1 | 7.6 | | |
| PV of PPG external debt (in Billion of US dollars) | | | 9.7 | 11.1 | 11.7 | 12.8 | 13.6 | 14.4 | 15.0 | 16.0 | 21.1 | | |
| (PVt-PVt-1)/GDPt-1 (in percent) | | | | 6.0 | 2.9 | 4.0 | 2.9 | 2.6 | 1.6 | 0.0 | 0.6 | | |
| Non-interest current account deficit that stabilizes debt ratio | 3.7 | -3.0 | 1.7 | -2.7 | 8.7 | 8.1 | 7.0 | 7.2 | 5.9 | 1.6 | 1.3 | | |

| | |
|---|---|
| **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.

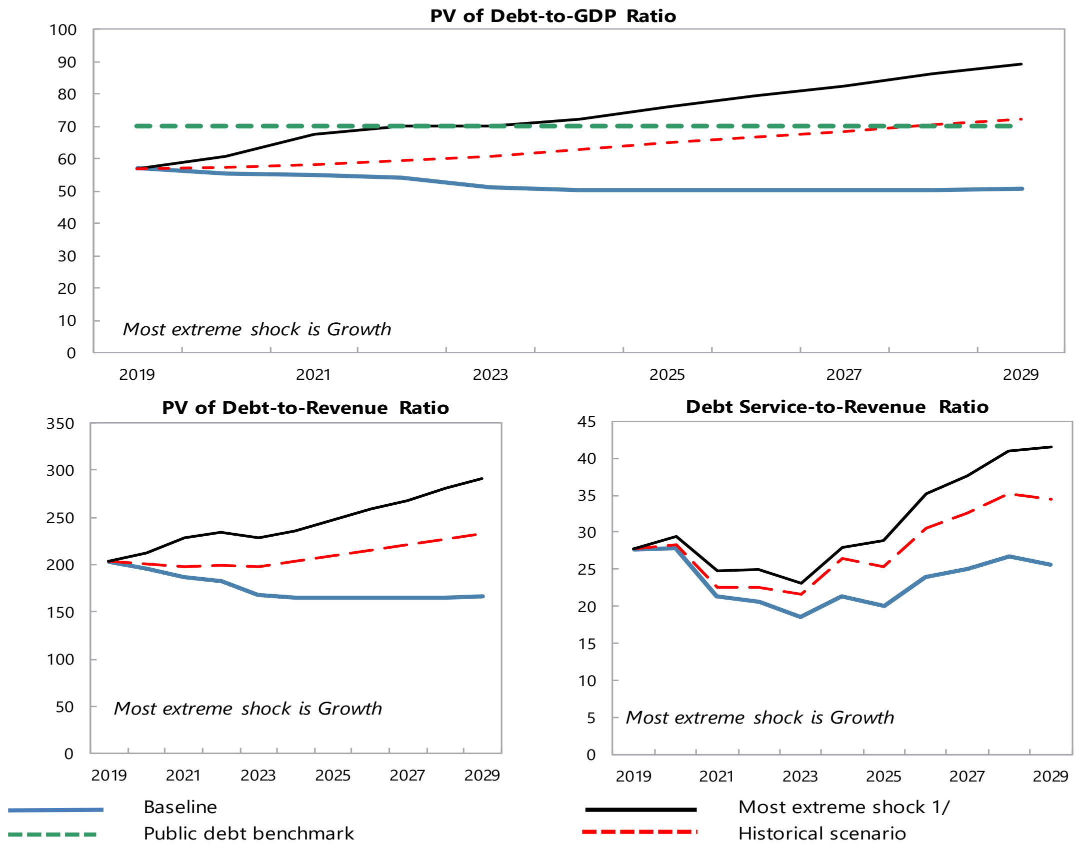
5/ Defined as grants, concessional loans, and debt relief.

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 7. 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** | 48% | 48% |
| **Domestic medium and long-term** | 45% | 45% |
| **Domestic short-term** | 5% | 7% |
| **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** | 4.1% | 4.1% |
| **Avg. maturity (incl. grace period)** | 5 | 5 |
| **Avg. grace period** | 3 | 3 |
| **Domestic short-term debt** | | |
| **Avg. real interest rate** | 3% | 3% |

* 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.

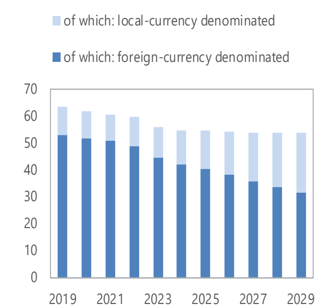
1/ The most extreme stress test is the test that yields the highest ratio in or before 2029. The stress test with a one-off breach is also presented (if any), while the one-off breach is deemed away for mechanical signals. When a stress test with a one-off breach happens to be the most exterme shock even after disregarding the one-off breach, only that stress test (with a one-off breach) would be presented.

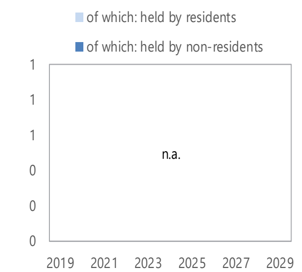
# Table 5. Senegal: Public Sector Debt Sustainability Framework, Baseline Scenario, 2016-39
(Percent of GDP, unless otherwise indicated)

| | Actual | | | Projections | | | | | | | | Average 6/ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2029 | 2039 | Historical | Projections |
| **Public sector debt 1/** | 47.5 | 61.2 | 61.4 | 63.7 | 61.9 | 60.8 | 59.6 | 56.0 | 54.7 | 54.0 | 51.4 | 41.6 | 57.0 |
| **of which: external debt** | 32.4 | 39.8 | 48.5 | 53.5 | 51.9 | 51.0 | 48.8 | 44.5 | 42.0 | 31.5 | 21.3 | 30.1 | 42.9 |
| | 15.1 | 21.4 | 13.0 | 10.2 | 10.0 | 9.8 | 10.9 | 11.5 | 12.7 | 22.5 | 30.1 | | |
| Change in public sector debt | 3.0 | 13.7 | 0.2 | 2.3 | -1.8 | -1.1 | -1.2 | -3.6 | -1.3 | 0.0 | -0.2 | | |
| **Identified debt-creating flows** | 1.2 | -4.7 | 2.0 | 2.6 | -0.6 | -0.9 | -1.2 | -3.6 | -1.3 | -0.1 | -0.2 | 2.2 | -0.5 |
| **Primary deficit** | 1.6 | 0.6 | 2.2 | 2.7 | 1.9 | 2.3 | 2.4 | 2.1 | 1.7 | 1.4 | 0.7 | 2.5 | 1.8 |
| Revenue and grants | 20.7 | 27.3 | 26.3 | 28.0 | 28.4 | 29.3 | 29.7 | 30.5 | 30.5 | 30.5 | 30.5 | 20.2 | 29.9 |
| *of which: grants* | 2.2 | 2.2 | 2.0 | 1.9 | 1.9 | 1.9 | 1.8 | 1.7 | 1.6 | 1.6 | 1.4 | | |
| Primary (noninterest) expenditure | 22.3 | 27.9 | 28.5 | 30.7 | 30.4 | 31.6 | 32.1 | 32.6 | 32.1 | 31.8 | 31.1 | 22.7 | 31.7 |
| **Automatic debt dynamics** | -0.4 | -5.3 | -0.1 | -0.2 | -2.5 | -3.2 | -3.6 | -5.7 | -3.0 | -1.4 | -0.9 | | |
| Contribution from interest rate/growth differential | -1.4 | -2.3 | -2.4 | -1.7 | -2.5 | -2.9 | -3.5 | -5.1 | -3.1 | -0.8 | -0.5 | | |
| *of which: contribution from average real interest rate* | 1.2 | 0.8 | 1.5 | 1.8 | 1.6 | 1.2 | 1.2 | 1.0 | 1.1 | 1.9 | 1.9 | | |
| *of which: contribution from real GDP growth* | -2.7 | -3.2 | -3.8 | -3.5 | -4.0 | -4.0 | -4.7 | -6.2 | -4.1 | -2.7 | -2.3 | | |
| Contribution from real exchange rate depreciation | 1.0 | -3.0 | 2.2 | ... | ... | ... | ... | ... | ... | ... | ... | | |
| **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 | 18.4 | -1.8 | 1.2 | -1.3 | -0.5 | -0.1 | -0.6 | 0.1 | -0.6 | -0.4 | 2.1 | -0.4 |
| **Sustainability indicators** | | | | | | | | | | | | | |
| **PV of public debt-to-GDP ratio 2/** | ... | ... | 55.6 | 57.0 | 55.5 | 54.8 | 54.1 | 51.1 | 50.2 | 50.6 | 48.9 | | |
| **PV of public debt-to-revenue and grants ratio** | ... | ... | 211.2 | 203.5 | 195.2 | 187.2 | 181.9 | 167.9 | 164.9 | 166.2 | 160.6 | | |
| **Debt service-to-revenue and grants ratio 3/** | 35.6 | 26.0 | 39.5 | 27.7 | 27.8 | 21.4 | 20.7 | 18.5 | 21.4 | 25.6 | 28.1 | | |
| Gross financing need 4/ | 7.4 | 6.3 | 12.8 | 10.5 | 9.8 | 8.6 | 8.5 | 7.7 | 8.2 | 9.2 | 9.2 | | |
| **Key macroeconomic and fiscal assumptions** | | | | | | | | | | | | | |
| Real GDP growth (in percent) | 6.4 | 7.1 | 6.7 | 6.0 | 6.8 | 7.0 | 8.4 | 11.6 | 8.0 | 5.3 | 4.7 | 4.8 | 6.8 |
| Average nominal interest rate on external debt (in percent) | 3.2 | 2.6 | 4.1 | 4.4 | 4.0 | 3.7 | 3.7 | 3.6 | 3.7 | 3.7 | 3.5 | 2.6 | 3.8 |
| Average real interest rate on domestic debt (in percent) | 5.2 | 4.5 | 4.3 | 5.1 | 5.9 | 4.3 | 4.8 | 3.6 | 3.7 | 4.0 | 4.0 | 4.6 | 4.3 |
| Real exchange rate depreciation (in percent, + indicates depreciation) | 3.3 | -9.8 | 5.9 | ... | ... | ... | ... | ... | ... | ... | ... | 2.9 | ... |
| Inflation rate (GDP deflator, in percent) | 1.0 | 0.6 | 0.6 | 1.1 | 1.1 | 1.8 | 1.2 | 2.4 | 2.3 | 2.0 | 2.0 | 0.7 | 1.8 |
| Growth of real primary spending (deflated by GDP deflator, in percent) | 10.6 | 34.0 | 9.0 | 14.4 | 5.5 | 11.2 | 10.3 | 13.1 | 6.5 | 5.4 | 4.8 | 8.8 | 7.9 |
| Primary deficit that stabilizes the debt-to-GDP ratio 5/ | -1.4 | -13.1 | 2.0 | 0.5 | 3.7 | 3.4 | 3.6 | 5.8 | 3.0 | 1.4 | 0.9 | -4.2 | 2.5 |
| 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/




Sources: Senegal authorities; and staff estimates and projections.

1/ Coverage of debt: The central, state, and local governments plus 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.

## Table 6. 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** | 46 | 46 | 45 | 43 | 40 | 38 | 36 | 34 | 32 | 30 | 28 |
| **A. Alternative Scenarios** | | | | | | | | | | | |
| A1. Key variables at their historical averages in 2019-2039 2/ | 46 | 48 | 50 | 53 | **59** | **65** | **70** | **75** | **80** | **87** | **92** |
| **B. Bound Tests** | | | | | | | | | | | |
| B1. Real GDP growth | 46 | 49 | 51 | 49 | 45 | 43 | 41 | 39 | 37 | 34 | 32 |
| B2. Primary balance | 46 | 46 | 47 | 45 | 41 | 39 | 38 | 36 | 34 | 32 | 30 |
| B3. Exports | 46 | 49 | 55 | 53 | 48 | 45 | 44 | 42 | 39 | 37 | 34 |
| B4. Other flows 3/ | 46 | 49 | 52 | 50 | 46 | 43 | 42 | 40 | 37 | 35 | 32 |
| B5. Depreciation | 46 | **58** | 50 | 48 | 44 | 42 | 40 | 38 | 35 | 33 | 31 |
| B6. Combination of B1-B5 | 46 | **57** | **60** | **57** | 53 | 50 | 48 | 46 | 43 | 40 | 37 |
| **C. Tailored Tests** | | | | | | | | | | | |
| C1. Combined contingent liabilities | 46 | 49 | 48 | 46 | 43 | 41 | 40 | 38 | 36 | 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 | 46 | 51 | 51 | 49 | 45 | 42 | 41 | 39 | 36 | 34 | 31 |
| **Threshold** | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 |
| **PV of debt-to-exports ratio** | | | | | | | | | | | |
| **Baseline** | 204 | 195 | 188 | 161 | 129 | 123 | 116 | 112 | 105 | 98 | 91 |
| **A. Alternative Scenarios** | | | | | | | | | | | |
| A1. Key variables at their historical averages in 2019-2039 2/ | 204 | 203 | 206 | 196 | 191 | 212 | 223 | **245** | **263** | **283** | **297** |
| **B. Bound Tests** | | | | | | | | | | | |
| B1. Real GDP growth | 204 | 195 | 188 | 161 | 129 | 123 | 116 | 112 | 105 | 98 | 91 |
| B2. Primary balance | 204 | 198 | 194 | 167 | 134 | 128 | 121 | 117 | 110 | 103 | 95 |
| B3. Exports | 204 | **243** | **310** | **266** | 213 | 203 | 191 | 186 | 175 | 162 | 149 |
| B4. Other flows 3/ | 204 | 210 | 216 | 185 | 148 | 142 | 133 | 129 | 122 | 113 | 104 |
| B5. Depreciation | 204 | 195 | 164 | 141 | 114 | 108 | 102 | 98 | 92 | 86 | 80 |
| B6. Combination of B1-B5 | 204 | **247** | 215 | 233 | 187 | 178 | 168 | 163 | 153 | 142 | 131 |
| **C. Tailored Tests** | | | | | | | | | | | |
| C1. Combined contingent liabilities | 204 | 208 | 201 | 172 | 138 | 134 | 127 | 124 | 117 | 110 | 102 |
| 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 | 204 | 195 | 188 | 162 | 131 | 125 | 117 | 112 | 105 | 98 | 90 |
| **Threshold** | 240 | 240 | 240 | 240 | 240 | 240 | 240 | 240 | 240 | 240 | 240 |
| **Debt service-to-exports ratio** | | | | | | | | | | | |
| **Baseline** | 18 | **23** | 17 | 14 | 10 | 13 | 9 | 12 | 12 | 12 | 10 |
| **A. Alternative Scenarios** | | | | | | | | | | | |
| A1. Key variables at their historical averages in 2019-2039 2/ | 18 | **24** | 18 | 16 | 13 | 19 | 15 | 21 | **23** | **24** | **23** |
| **B. Bound Tests** | | | | | | | | | | | |
| B1. Real GDP growth | 18 | **23** | 17 | 14 | 10 | 13 | 9 | 12 | 12 | 12 | 10 |
| B2. Primary balance | 18 | **23** | 17 | 14 | 10 | 13 | 10 | 12 | 13 | 13 | 11 |
| B3. Exports | 18 | **26** | **23** | **21** | 15 | 19 | 14 | 18 | 19 | 20 | 17 |
| B4. Other flows 3/ | 18 | **23** | 17 | 15 | 10 | 13 | 10 | 13 | 14 | 14 | 12 |
| B5. Depreciation | 18 | **23** | 17 | 13 | 9 | 12 | 9 | 12 | 12 | 11 | 9 |
| B6. Combination of B1-B5 | 18 | **25** | **22** | 19 | 13 | 17 | 13 | 16 | 18 | 18 | 15 |
| **C. Tailored Tests** | | | | | | | | | | | |
| C1. Combined contingent liabilities | 18 | **23** | 17 | 14 | 10 | 13 | 10 | 13 | 13 | 13 | 11 |
| 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 | 18 | **23** | 17 | 15 | 11 | 16 | 15 | 17 | 13 | 11 | 8 |
| **Threshold** | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 |
| **Debt service-to-revenue ratio** | | | | | | | | | | | |
| **Baseline** | 16 | 20 | 15 | 13 | 10 | 13 | 10 | 13 | 13 | 13 | 11 |
| **A. Alternative Scenarios** | | | | | | | | | | | |
| A1. Key variables at their historical averages in 2019-2039 2/ | 16 | 21 | 16 | 16 | 14 | 20 | 16 | 22 | **24** | **26** | **24** |
| **B. Bound Tests** | | | | | | | | | | | |
| B1. Real GDP growth | 16 | 21 | 17 | 15 | 12 | 15 | 11 | 15 | 15 | 15 | 12 |
| B2. Primary balance | 16 | 20 | 15 | 14 | 10 | 14 | 10 | 13 | 13 | 14 | 11 |
| B3. Exports | 16 | 20 | 15 | 15 | 11 | 15 | 11 | 14 | 15 | 16 | 14 |
| B4. Other flows 3/ | 16 | 20 | 15 | 14 | 11 | 14 | 11 | 14 | 14 | 15 | 13 |
| B5. Depreciation | 16 | **25** | 18 | 16 | 12 | 16 | 12 | 16 | 16 | 15 | 12 |
| B6. Combination of B1-B5 | 16 | 22 | 18 | 17 | 13 | 16 | 13 | 16 | 17 | 17 | 15 |
| **C. Tailored Tests** | | | | | | | | | | | |
| C1. Combined contingent liabilities | 16 | 20 | 15 | 14 | 11 | 14 | 10 | 13 | 14 | 14 | 11 |
| 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 | 16 | 20 | 15 | 14 | 11 | 17 | 16 | 18 | 14 | 11 | 8 |
| **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.

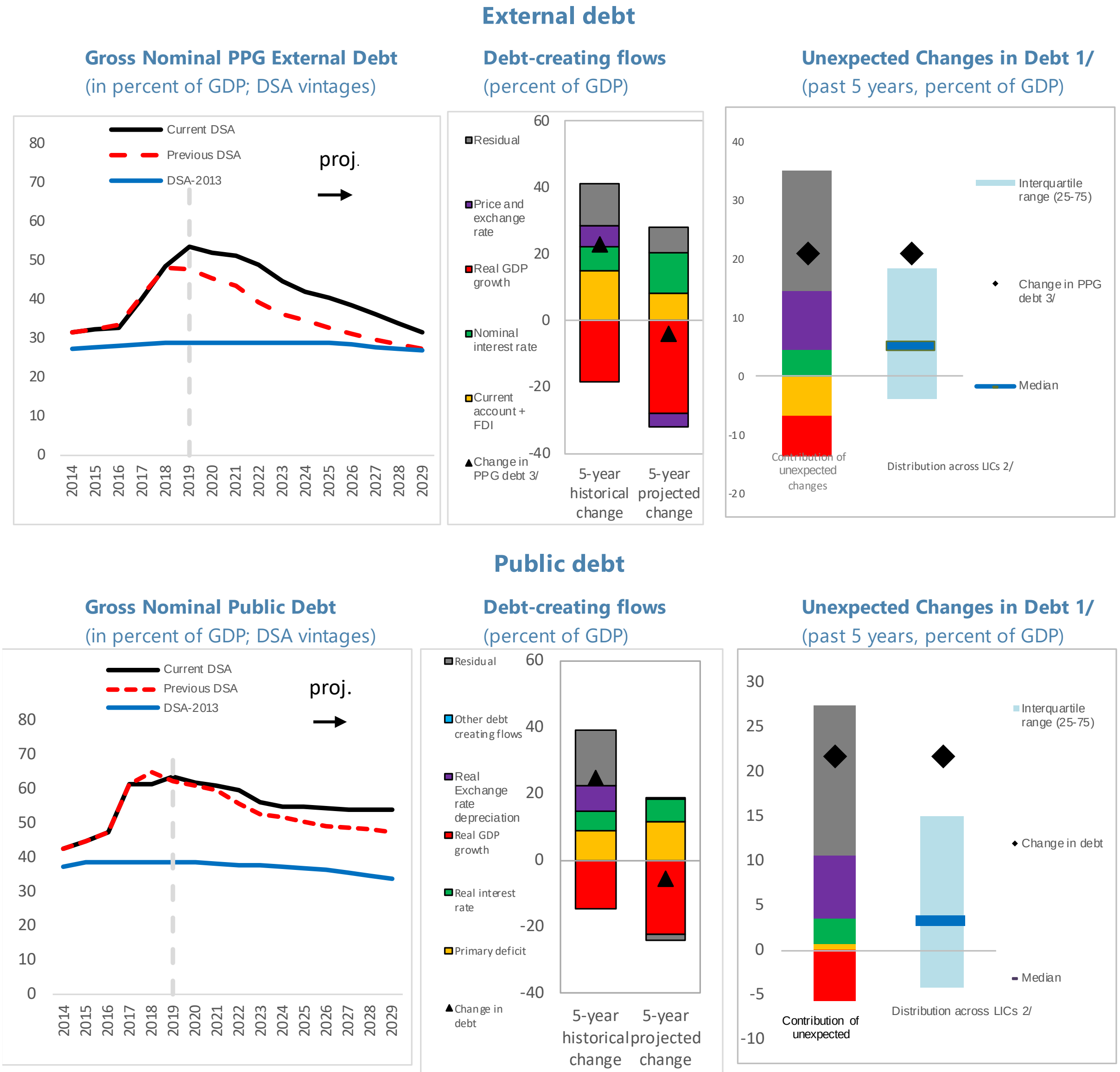
3/ Includes official and private transfers and FDI.

## Table 7. 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** | 57 | 56 | 55 | 54 | 51 | 50 | 50 | 50 | 50 | 50 | 51 |
| **A. Alternative Scenarios** | | | | | | | | | | | |
| A1. Key variables at their historical averages in 2019-2039 2/ | 57 | 57 | 58 | 60 | 61 | 63 | 65 | 67 | 68 | 70 | 72 |
| **B. Bound Tests** | | | | | | | | | | | |
| B1. Real GDP growth | 57 | 61 | 68 | 70 | 70 | 72 | 76 | 79 | 82 | 86 | 89 |
| B2. Primary balance | 57 | 57 | 58 | 57 | 54 | 53 | 53 | 53 | 52 | 53 | 53 |
| B3. Exports | 57 | 59 | 64 | 63 | 59 | 58 | 57 | 57 | 57 | 56 | 56 |
| B4. Other flows 3/ | 57 | 59 | 62 | 61 | 57 | 56 | 56 | 56 | 55 | 55 | 55 |
| B5. Depreciation | 57 | 68 | 64 | 60 | 54 | 51 | 49 | 47 | 45 | 43 | 41 |
| B6. Combination of B1-B5 | 57 | 56 | 57 | 57 | 55 | 54 | 55 | 55 | 56 | 57 | 57 |
| **C. Tailored Tests** | | | | | | | | | | | |
| C1. Combined contingent liabilities | 57 | 62 | 61 | 60 | 57 | 56 | 56 | 55 | 55 | 55 | 55 |
| 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 | 57 | 56 | 55 | 54 | 52 | 51 | 51 | 50 | 50 | 50 | 50 |
| **Public debt benchmark** | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 |
| **PV of Debt-to-Revenue Ratio** | | | | | | | | | | | |
| **Baseline** | 204 | 195 | 187 | 182 | 168 | 165 | 166 | 165 | 165 | 166 | 166 |
| **A. Alternative Scenarios** | | | | | | | | | | | |
| A1. Key variables at their historical averages in 2019-2039 2/ | 204 | 201 | 198 | 199 | 198 | 204 | 210 | 216 | 221 | 227 | 233 |
| **B. Bound Tests** | | | | | | | | | | | |
| B1. Real GDP growth | 204 | 213 | 229 | 234 | 228 | 236 | 248 | 259 | 268 | 281 | 291 |
| B2. Primary balance | 204 | 200 | 197 | 191 | 176 | 173 | 173 | 173 | 172 | 173 | 173 |
| B3. Exports | 204 | 206 | 218 | 210 | 193 | 189 | 189 | 188 | 186 | 185 | 184 |
| B4. Other flows 3/ | 204 | 208 | 210 | 203 | 187 | 183 | 183 | 183 | 181 | 180 | 179 |
| B5. Depreciation | 204 | 239 | 219 | 204 | 179 | 168 | 162 | 154 | 147 | 141 | 135 |
| B6. Combination of B1-B5 | 204 | 196 | 196 | 192 | 179 | 178 | 180 | 182 | 183 | 186 | 187 |
| **C. Tailored Tests** | | | | | | | | | | | |
| C1. Combined contingent liabilities | 204 | 219 | 209 | 203 | 187 | 183 | 183 | 182 | 181 | 182 | 182 |
| 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 | 204 | 195 | 188 | 183 | 169 | 166 | 167 | 166 | 164 | 165 | 165 |
| **Debt Service-to-Revenue Ratio** | | | | | | | | | | | |
| **Baseline** | 28 | 28 | 21 | 21 | 18 | 21 | 20 | 24 | 25 | 27 | 26 |
| **A. Alternative Scenarios** | | | | | | | | | | | |
| A1. Key variables at their historical averages in 2019-2039 2/ | 28 | 28 | 23 | 23 | 22 | 27 | 25 | 31 | 33 | 35 | 34 |
| **B. Bound Tests** | | | | | | | | | | | |
| B1. Real GDP growth | 28 | 29 | 25 | 25 | 23 | 28 | 29 | 35 | 38 | 41 | 42 |
| B2. Primary balance | 28 | 28 | 22 | 21 | 19 | 23 | 22 | 25 | 26 | 28 | 27 |
| B3. Exports | 28 | 28 | 22 | 22 | 20 | 22 | 21 | 25 | 26 | 29 | 28 |
| B4. Other flows 3/ | 28 | 28 | 22 | 22 | 19 | 22 | 21 | 25 | 26 | 28 | 27 |
| B5. Depreciation | 28 | 29 | 25 | 24 | 21 | 24 | 21 | 26 | 27 | 28 | 26 |
| B6. Combination of B1-B5 | 28 | 27 | 23 | 23 | 20 | 23 | 22 | 26 | 28 | 30 | 29 |
| **C. Tailored Tests** | | | | | | | | | | | |
| C1. Combined contingent liabilities | 28 | 28 | 24 | 22 | 20 | 26 | 25 | 26 | 26 | 28 | 28 |
| 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 | 28 | 28 | 22 | 21 | 20 | 24 | 25 | 28 | 26 | 25 | 23 |

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 8. Senegal: Driver of Debt Dynamics—Baseline Scenario, 2014-29**



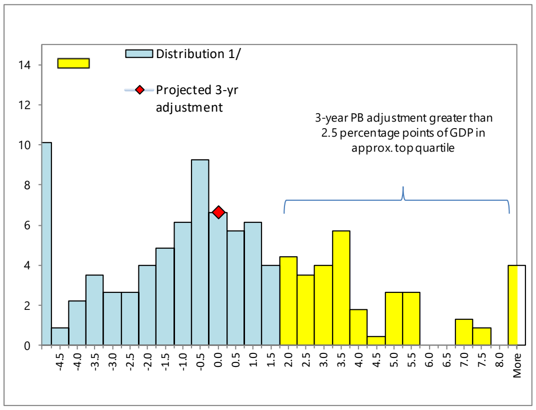

1/ Difference between anticipated and actual contributions on debt ratios.

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.

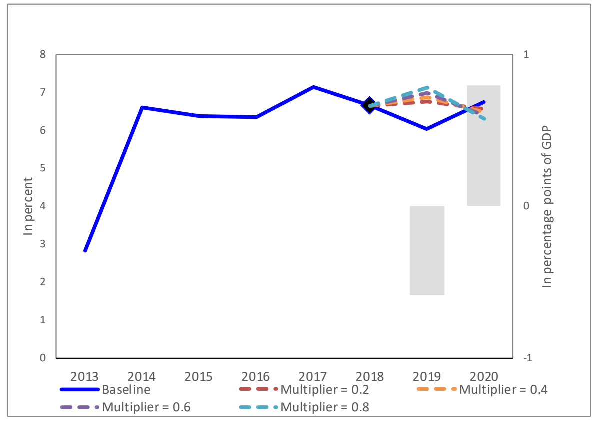
## Figure 9. Senegal: Realism Tools, 2014-24

### 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.

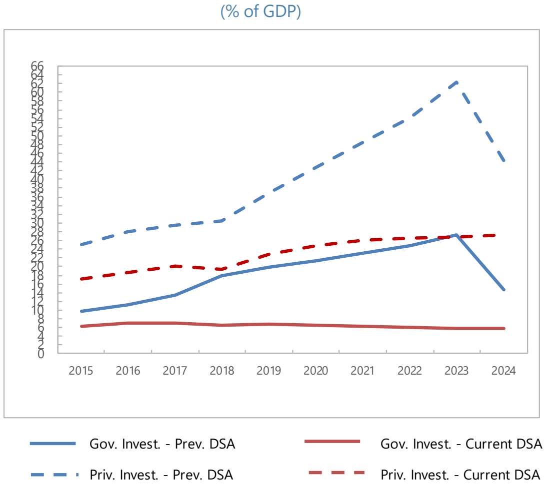
### Fiscal Adjustment and Possible Growth Paths 1/




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).

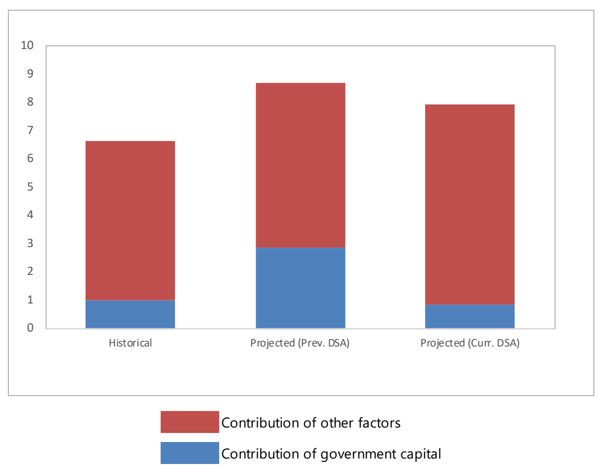
### Public and Private Investment Rates

(% of GDP)




### Contribution to Real GDP growth

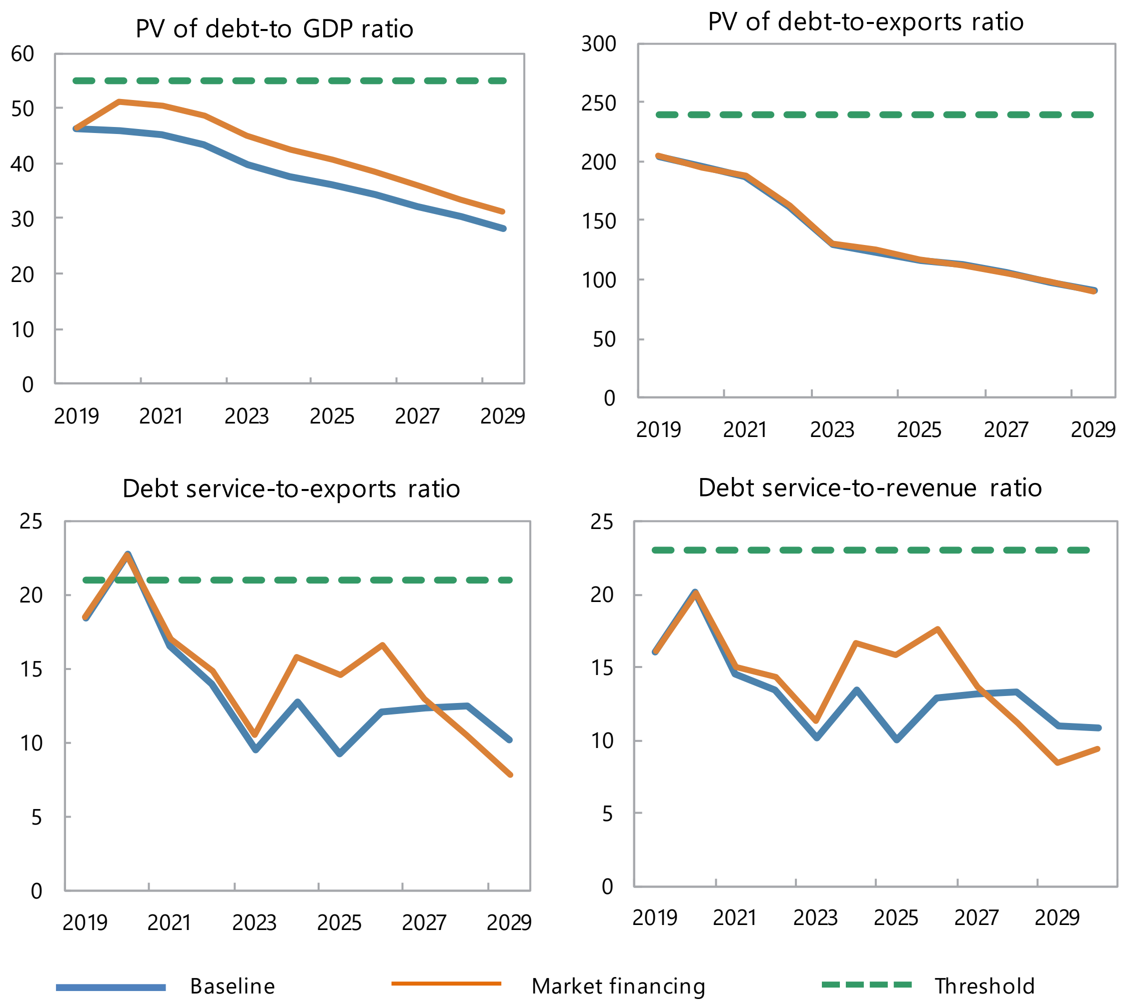
(percent, 5-year average)



## Figure 10. Senegal: Market-Financing Risk Indicators, 2019-29

| | GFN 1/ | EMBI 2/ |
|---|---|---|
| Benchmarks | 14 | 570 |
| Values | 10 | 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 11. 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.