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BENIN

JOINT WORLD BANK-IMF DEBT SUSTAINABILITY ANALYSIS

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BENIN: JOINT BANK-FUND DEBT SUSTAINABILITY ANALYSIS	
Risk of external debt distress	Moderate[2]
Overall risk of debt distress	Moderate
Granularity in the risk rating	Limited space to absorb shocks
Application of judgment	No

Benin remains at moderate risk of external and overall debt distress, unchanged from the previous DSA (May 2023). All projected external debt burden indicators remain below high-risk thresholds under the baseline scenario, apart from a one-off breach to the debt service-to-revenue ratio in 2030 when large Eurobond payments are falling due. Nevertheless, external debt indicators have seen some deterioration since the previous DSA as the authorities have substitute more costly domestic financing with external borrowing amid tighter conditions on the regional security market. The space to absorb shocks remains limited. External debt burden indicators also breach high-risk thresholds in selected stress tests, particularly commodity price, export, and natural disaster-related shocks. The high debt service-to-revenue ratio continues to leave debt vulnerable to revenue underperformance or shifts in market sentiment that could increase rollover costs. However, Benin is expected to be able to refinance payments falling due in 2024-26. Sustained revenue mobilization efforts, along with continued prudent borrowing, active debt management strategy and mainstreaming climate change into policymaking, would mitigate the risk of debt distress. In seeking the most

[1] Prepared by the IMF and the World Bank. This DSA follows the Guidance Note of the Join Bank-Fund Debt Sustainability Framework for Low Income Countries, February 2018.

[2] Benin retains a medium-rated debt-carrying capacity, given the 2.98 Composite Indicator, which is based on the October 2023 WEO and the 2022 CPIA.

cost-effective financing options, the authorities should also ensure that the financing mix does not leave debt overly exposed to external risk.

PUBLIC DEBT COVERAGE

1. This Debt Sustainability Analysis (DSA) covers central government and central bank debt as well as guarantees provided by the central government (Text Table 1).[3] Central bank debt borrowed on behalf of the government (i.e., debt to the IMF) is included as external debt. External debt is defined on a currency basis owing to data limitations, except for debt from the regional development bank (BOAD), which is included as external debt for the purpose of the DSA.

Text Table 1. Benin: Public Debt Coverage Under the Baseline Scenario

	Subsectors of the public sector	Sub-sectors covered
1	Central government	X
2	State and local government	
3	Other elements in the general government	
4	o/w: Social security fund	
5	o/w: Extra budgetary funds (EBFs)	
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	

2. Debt coverage remains fairly comprehensive but does not include non-guaranteed SOE debt and the non-financial debts of other government entities.[4] Benin received a high score for sectoral coverage on the IDA Debt Reporting heat map for 2022. Although public debt does not include non-guaranteed SOE debt, the authorities have published information on the outstanding stock of non-guaranteed SOE debt (comprising 13 SOEs), which stood at 1.9 percent of GDP at end-2021. They also included details on on-lending to SOEs in quarterly debt bulletins in 2021, as part of IDA's Sustainable Development Finance Policy (SDFP) and most recent Development Policy Operations. Also, under the SDFP, the Debt Management Office and the Directorate in charge of SOEs (General Directorate of State Participations and Denationalization, DGPED) established a monitoring system following the adoption by ministerial order of a risk-based framework for granting SOE guarantees. The authorities also published details on the non-financial debt held by local governments, including communes (e.g., supplier credit or debt to the central government), which was estimated 0.3 ppt of GDP at end-2021. These entities have not contracted financial debt and cannot do so without the agreement of the central government. The authorities see consolidating the general government fiscal accounts as an important prerequisite for broadening debt coverage, particularly incorporating the financial statements of the SOEs (both on the revenue and expenditure sides) for inclusion in the DSA. Expanding this coverage of fiscal accounts

[3] Debt on-lent to SOEs is also included as part of central government borrowing.

[4] Other non-financial government debts would include items as defined by GFSM 2001/2014, including accounts payable, claims toward social security, deposits of public entities held within the Treasury, appropriations relating to letters of comfort, and actuarial liabilities for civil servants' pensions.

remains an important medium-term capacity development priority being supported by AFRITAC-West, including a Fall 2023 technical assistance mission to discuss the related workplan.[5] The authorities also recently prepared and annexed to the 2024 budget law a quantitative fiscal risk assessment. The statement assessed risks from SOEs; it reported positive net income from these entities from 2020–22.[6]

Text Table 2. Benin: Contingent Liability Stress Test

		Default	Used for the analysis	Reasons for deviations from the default settings
1	The country's coverage of public debt	The central government, central bank, government-guaranteed debt		
2	Other elements of the general government not captured in 1.	0 percent of GDP	0.3	Estimated local debt not captured in the central government sector at end-2021.
3	SoE's debt (guaranteed and not guaranteed by the government) 1/	2 percent of GDP	1.9	The stock of SOE's debt not captured in the central government sector is estimated at 1.9 percent of GDP at end-2021.
4	PPP	35 percent of PPP stock	2.4	
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)		9.6	

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%.

3. The contingent liabilities shock has been calibrated to reflect risk associated with debt not captured in the baseline and other risks. The total shock stands at 9.6 percent of GDP and includes 1.9 percent of GDP in SOE debt based on the latest available data (end-2021), 0.3 percent of GDP for local government debt based on the latest reported estimate, 2.4 percent of GDP for PPPs based on the capital stock from the World Bank's PPP database (6.8 ppts of GDP), and the default setting for financial market risk (5.0 percent of GDP) (Text Table 2).[7] Benin's debt policy and management score was rated at 4.5 out of 6 in the 2019 and 2022 CPIA evaluations, with higher values corresponding to debt management strategies more conducive to minimizing budgetary risks and ensuring debt sustainability.

BACKGROUND

RECENT DEBT DEVELOPMENTS

4. Benin's public debt continued its upward trend through 2022.[8] Public debt rose to 54.2 percent of GDP in 2022 (from 50.3 percent of GDP in 2021) due to higher spending to meet urgent needs (with less grants), the CFA franc depreciation against the USD , and some additional pre-emptive domestic

[5] See Annex IX in Benin: 2022 Article IV Consultation and Requests for an Extended Arrangement under the Extended Fund Facility and an Arrangement under the Extended Credit Facility (IMF Country Report 22/245).

[6] *Déclaration sur Les Risques Budgétaires, PLF 2024.*

[7] Contingent liabilities have not materialized from these entities in recent years.

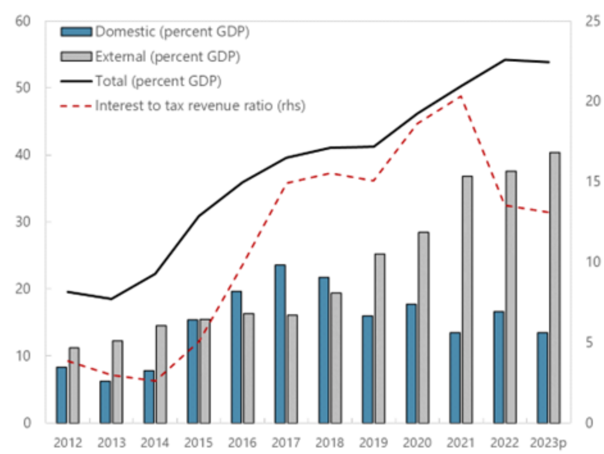
[8] Benin does not currently have any arrears vis-à-vis external creditors. Public domestic debt arrears are commitments to domestic suppliers that were validated in a 2019 audit (totaling 0.1 ppt of GDP as of end-June 2022), which do not suggest government solvency or liquidity problems given their small size.

issuances—the authorities issued FCFA 300 billion (2.9 percent of GDP) on the regional security market as part of their active debt management strategy to preempt adverse market conditions.[9]

5. Amid tightening financial conditions on the regional market, the authorities received an SDG loan to substitute domestic financing over the summer. Rates on the regional market have risen since the start of the year (Box 1). The €350 million SDG-loan (2 percent of GDP) is expected to fund SDG-related spending in the 2023 budget (substituting for domestic financing). Its issuance at an interest rate 2.9 percent above Euribor (4-year grace-period and 12-year maturity) was supported by the AfDB partial credit guarantee approved in 2022. This follows Benin's SDG bond issuance in 2021 (Africa's first ever) of €500 million for a 12.5-year maturity at 4.95 percent. The SDG financing contributes to the gradual shift toward external debt in recent years, where borrowing costs have been somewhat lower. The largest shares of debt at end-2022 were held by multilateral creditors and international bond holders at 38 percent and 19 percent, respectively (Text Table 3). Domestic public debt made up about 31 percent of the debt stock, with a large portion of securities on the regional financial market.

6. Proactive liability management has helped smooth out the public debt service profile, reduce costs, and roll over risks. The overall public debt service-to-revenue ratio is expected to average 33 percent in 2023-27 (slightly lower than 35 percent in the previous DSA), helped by good revenue performance. On the external side, debt service costs benefited from the 2021 reimbursement of about 65 percent of the 2019 Eurobond falling due in 2024–26. On the domestic side, an issuance of a US$300 million external commercial loan in 2018 backed by a World Bank partial guarantee was used to reprofile costly short term-domestic debt. Although near-term domestic debt service is significant, averaging 4.3 percent of GDP in 2023–25, Benin has aimed to mitigate rollover risks through proactive debt management (Box 1). The interest to tax revenue ratio is expected to decline further from its peak of 20 percent in 2021 to 13.1 percent in 2023.

Text Figure 1. Benin: Total Public Debt and Interest to Tax Revenue Ratio (2012–23, percent of GDP)



Sources: Country authorities and IMF staff estimates and projections.

[9] This DSA includes all debt service associated with these issuances. Given that the timeframe for drawing on these resources is currently undefined, the DSA assumes that they are maintained as precautionary resources implying upside to the projected baseline debt stock.

Box 1. Benin: Financing Conditions on the WAEMU Regional Market[1]

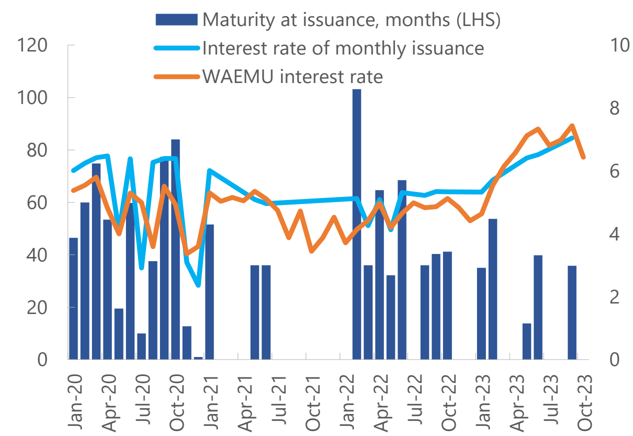
A persistent rise in regional public debt and the tightening of global financial conditions have made WAMEU financing conditions less favorable. Cumulative BCEAO policy rate hikes amounted to 125 basis points (bps) in 2022 and 25 bps in 2023, raising the minimum bid rate to 3.25 percent. The BCEAO explained that this decision was due to increased regional uncertainties, persistent inflationary pressure, tight international financial conditions, and limited external financing. However, the BCEAO has also engaged in *de facto* loosening of monetary conditions by purchasing regional debt worth CFAF 1 trillion in June and CFAF 933 billion in September in the secondary market.

Although Benin's borrowing costs have been lower than for some other WAEMU members, the country has seen an increase in rates in its recent issuances. At 5.9 percent, the weighted-average interest rate on Benin's entire debt stock remains high, albeit below the WAEMU average of 6.3 percent. As of end-October, Benin had issued 2.7 ppt of GDP in 2023 at an average of 6.2 percent with a weighted-average maturity of 3 years (Figure 1). In 2022, issuances amounted to around 5 percent of GDP, with an average interest rate of 5.2 percent and maturity of 6 years (including two seven-year bonds and one ten-year bond), while issuances immediately after COVID-19 (March 2020–December 2021) had average interest rate of 6 percent and maturity of 5 years. Issuances have been fully subscribed after a drop in the subscription rate in early 2023 (Figure 2), although a planned October issuance was postponed. While yield curves exhibit an upward sloping pattern at the aggregate level, Benin's curve shows no discernible pattern for the term structure of interest rates. The significant heterogeneity across WAEMU members in this regard reflects the relatively shallow and illiquid local financial markets, with limited activity in the secondary markets.[2]

[1]Prepared by Markus Specht (AFR).

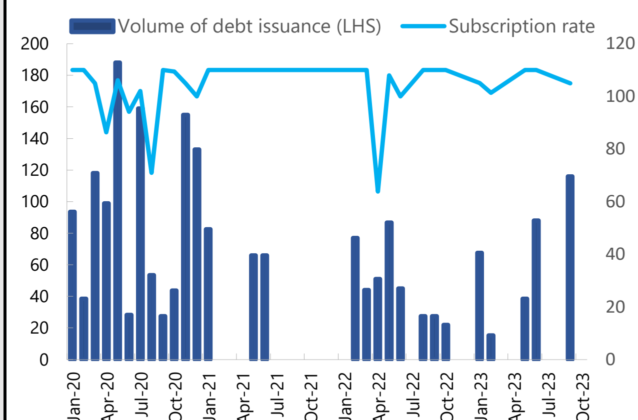
[2] IMF, 2023, "The WAEMU Regional Market for Government Debt in a Period of Tightening Financial Conditions" (West African Economic and Monetary Union: Selected Issues), *IMF Country Report No. 23/103.*

Figure 1. Yields and Maturities on Debt Issuance, 2020-2023
(monthly weighted averages; percent and months)



Source: UOMA-Titres and IMF staff calculations.

Figure 2. Volumes of Issuances and Subscription Rate, 2020-2023 (billions of CFAF and percent)

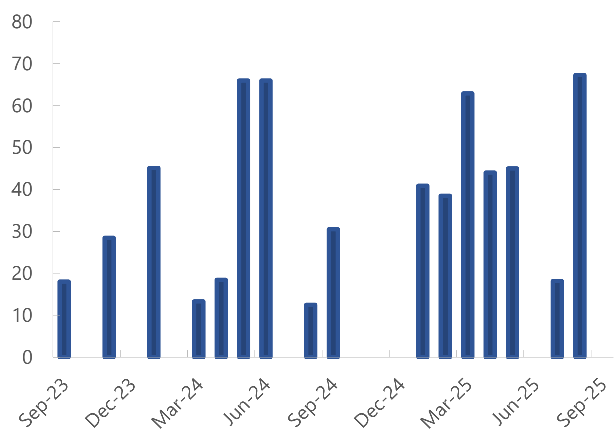


Source: UOMA-Titres and IMF staff calculations.

Box 1. Benin: Financing Conditions on the WAEMU Regional Market (concluded)

Short-term rollover needs for Benin in the domestic market are manageable, but continued proactive debt management will be important (Figure 3). Medium-term rollover needs are expected to peak in August 2025 at 0.5 percent of GDP, with similarly sized peaks in the short-term in May and June 2024 (Figure 3). Benin has aimed to mitigate rollover risks through proactive debt management such as recent liability issuances throughout 2022 to preempt adverse market conditions (which could be used in the future for financing or rollover needs) and by issuing longer maturities on the regional market. Benin's 2022 issuance of CFAF 150 billion in two tranches of 15 and 20 years marked the first 20-year issuance on the regional market and cemented the country's position as a market front-runner.[2] However, about one third of all debt in the domestic market is coming due in the next two years, with Benin's share of WAMEU-wide debt coming to maturity peaking at 73 percent in May 2025. Given high risk premia currently paid by WAEMU members with access to international capital markets (i.e., Benin, Senegal, Cote d'Ivoire), liquidity could be constrained in case the larger economies (particularly Cote d'Ivoire) decide to borrow regionally rather than externally at the same time.

Figure 3. Scheduled Monthly Debt Redemptions, 2023-2025(billions of CFAF)



Sources: UOMA-Titres and IMF staff calculations.

[2] IMF, 2022, Benin: 2022 Article IV Consultation Staff Report (Annex VI: Benin's Access to Capital Markets), *IMF Country Report No. 22/245.*

MACROECONOMIC ASSUMPTIONS

7. Macroeconomic assumptions underlying the DSA projections are consistent with the Third EFF/ECF Review and RSF request baseline with changes from the previous DSA (May 2023) (Text Table 4). Compared with the previous DSA, the baseline incorporates the near-term impact of policy changes in Nigeria and the coup in Niger on growth and inflation, additional fiscal spending supported by the mobilization of additional budget support and grants, and updated financing to reflect greater reliance on SDG financing and the Fund-supported RSF. The main assumptions are as follows:

- **Real GDP Growth.** Near-term growth has been revised down from 6.0 to 5.6 percent of GDP in 2023 reflecting the Niger border amid regional sanctions following a coup in that country, including disruption of transit trade. Over the medium-term, the economy is expected to rebound as large-infrastructure investment consistent with the authorities' development objectives[10] and some recovery in private investment bolstered by the authorities' efforts to improve competitiveness (e.g., acceleration of the Special Economic Zone, promotion of SMEs) is expected to continue to support growth, which is expected to remain around potential at 6 percent.[11] Similarly, longer-term projections remain conservative at 5.7 percent converging to the steady-state.

- **Inflation and GDP deflator.** Inflation for 2023 is now projected at 3.7 percent of GDP (compared with 3.5 percent at the Second Review). Although recent pump price hikes in Nigeria, have significantly increased the price of smuggled gasoline onto Benin, these have been largely offset by negative inflation of some food items. As a result, the GDP deflator is slightly higher over the medium-term, averaging 2.4 percent over 2023-28 compared with 2.2 percent in the previous DSA. The GDP deflator is expected to converge around 2 percent over the long term.

- **Primary fiscal balance.** The primary deficit (including grants) is expected to narrow to 2.8 percent of GDP in 2023 as fiscal policy shifts toward revenue-based fiscal consolidation, compared with 2.6 percent in the previous DSA due to the mobilization of additional budget support and higher capital expenditure (see below). In line with the current WAEMU-wide stance, the baseline continues to assume that the overall fiscal deficit would converge to the regional fiscal norm of 3 percent of GDP in 2025. Fiscal consolidation will be supported by revenue mobilization, spending prioritization, efficiency gains in public investment, and unwinding of temporary spending measures (related to COVID-19 and Russia's invasion of Ukraine). Over the long term while the government's ambitious development plan will generate spending needs, the authorities have a solid track record of fiscal prudence and prioritizing debt sustainability, with the latter further bolstered by the strong public consensus on keeping debt under control.

[10] Benin's National Development Plan (PND; 2018-25) emphasizes Sustainable Development Goals (SDG), particularly closing infrastructure and human capital gaps by scaling up spending on education, health, access to water, and electricity. The IMF 2022-25 ECF/EFF will help anchor this development plan by focusing on creating fiscal space to support significant development needs while preserving debt sustainability.

[11] Estimate is based on a growth accounting exercise, using envisaged public and private investment dynamics for 2023-26, average historical contributions to growth of human capital accumulation for 2015-18 and estimated total factor productivity during the previous IMF-supported ECF (2017-20).

Text Table 3. Benin: Decomposition of Public Debt and Debt Service by Creditor, 2022–24[1]

	Debt Stock (end of period)			Debt Service					
	2022			2022	2023	2024	2022	2023	2024
	(In US$ millions)	*(Percent total debt)*	*(Percent GDP)*	*(In US$ millions)*			*(Percent GDP)*		
Total	9494.6	100	54.2	1503	1171	1030	8.6	5.9	4.8
External	6584.2	69.3	37.6	351	407	517	2.0	2.1	2.4
Multilateral creditors[2]	3593	37.8	20.5	135	158	228	0.8	0.8	1.1
IMF	706	7.4	4.0						
World Bank	1536	16.2	8.8						
ADB/AfDB/IADB	486	5.1	2.8						
Other Multilaterals	865	9.1	4.9						
Arab Bank for Economic Development	54	0.6	0.3						
BOAD	324	3.4	1.8						
Nordic Development Fund	14	0.1	0.1						
ECOWAS Bank for Investment and Development	37	0.4	0.2						
European Investment Bank	72	0.8	0.4						
IFAD	65	0.7	0.4						
OPEC	37	0.4	0.2						
Islamic Development Bank	263	2.8	1.5						
Bilateral Creditors	514	5.4	2.9	31	39	40	0.2	0.2	0.2
Paris Club	121	1.3	0.7	2	5	6	0.0	0.0	0.0
France	121	1.3	0.7						
Non-Paris Club	392	4.1	2.2	29	35	34	0.2	0.2	0.2
China	299	3.1	1.7						
India	16	0.2	0.1						
Kuwait	39	0.4	0.2						
Saudi Arabia	37	0.4	0.2						
Bonds	1775	18.7	10.1	82	98	162	0.5	0.5	0.8
Commercial creditors	702	7.4	4.0	104	113	87	0.6	0.6	0.4
MUFG Bank	213	2.2	1.2						
RABOBANK	151	1.6	0.9						
Bank of China	17	0.2	0.1						
Societe General	69	0.7	0.4						
UKEF	57	0.6	0.3						
Banco de Brazil	74	0.8	0.4						
Deutche Bank	49	0.5	0.3						
NTXS	35	0.4	0.2						
BPI France	9	0.1	0.0						
Credit Suisse	28	0.3	0.2						
Domestic[3]	2910	30.7	16.6	1152	764	513	6.6	3.9	2.4
Held by residents, total	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Held by non-residents, total	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
T-Bills	51	0.5	0.3						
Bonds	2688	28.3	15.3						
Loans[4]	222	2.3	1.3						
Memo items:									
Collateralized debt	0		0.0						
Contingent liabilities	306		1.7						
o/w: Public guarantees	9		0.1						
o/w: Other explicit contingent liabilities[5]	297		1.7						
Nominal GDP			17522	17522	19753	21583			

1/As reported by Country authorities according to their classification of creditors, including by official and commercial.

2/"Multilateral creditors" are simply institutions with more than one official shareholder and may not necessarily align with creditor classification under other IMF policies

3/Breakdown of debt by resident not availble due to data limitations in tracking holders of regional securities in secondary markets.

4/Includes central bank on lending related to the SDR allocation and guaranteed debt.

5/Estimation of commerical non-guaranteed SOE debt that is not included in the debt stock based on end-2021 estimation.

Sources: Country Authorities; and staff estimates and projections

Text Table 4. Benin: Baseline Macroeconomic Assumptions for Debt Sustainability Analysis

	2022	2023	2024	2025	2026	2027	2028	Medium-term 2023-28	Long-term 2029-43
GDP Growth (percent)									
Current DSA	6.3	5.6	6.0	5.9	6.0	5.9	6.0	5.9	5.7
Previous DSA[1]	6.3	6.0	6.0	6.0	6.0	6.0	6.0	6.0	5.7
GDP Deflator (percent)									
Current DSA	4.1	3.3	2.8	2.0	2.0	2.0	2.0	2.4	2.0
Previous DSA	4.1	3.3	2.0	2.0	2.0	2.0	2.0	2.2	2.0
Current account deficit (percent GDP)									
Current DSA	-6.2	-5.8	-5.4	-4.9	-4.8	-4.3	-4.2	-4.9	-3.4
Previous DSA	-6.3	-5.9	-5.6	-5.1	-4.9	-4.4	-4.4	-5.0	-4.4
Exports (percent GDP)									
Current DSA	23.9	22.1	22.1	21.9	21.8	21.8	21.9	21.9	22.6
Previous DSA	24.9	23.1	23.2	23.0	22.9	22.9	22.9	23.0	22.9
Primary Balance (percent GDP)									
Current DSA	-3.9	-2.8	-2.1	-1.4	-1.5	-1.5	-1.5	-1.8	-1.4
Previous DSA	-3.9	-2.6	-2.1	-1.3	-1.3	-1.4	-1.4	-1.7	-1.3
Revenue and grants (percent GDP)									
Current DSA	14.3	14.9	15.2	15.7	16.0	16.5	16.9	15.9	19.5
Previous DSA	14.3	14.7	15.2	15.6	16.0	16.5	16.9	15.8	19.3
Total expenditure (percent GDP)									
Current DSA	19.8	19.3	18.9	18.6	18.9	19.4	19.8	19.2	22.1
Previous DSA	19.8	19.0	18.9	18.5	18.9	19.4	19.8	19.1	22.0
Overall balance (percent GDP)									
Current DSA	-5.5	-4.5	-3.7	-2.9	-2.9	-2.9	-2.9	-3.3	-2.9
Previous DSA	-5.5	-4.3	-3.7	-2.9	-2.9	-2.9	-2.9	-3.3	-2.9

1/May 2023 Second EFF/ECF Review.

Source: IMF staff estimates and projections

- **Revenues and grants.** Revenues and grants for 2023 are higher at 14.9 percent of GDP (compared with 14.7 percent in the previous DSA), owing to an increase in grant financing thanks to the World Bank PACOFID program financing fertilizer subsidies that had previously been budgeted as current transfers (0.2 ppt of GDP). Strong tax efforts are expected to be maintained in 2023, as the authorities are locking in the strong 2022 tax revenue performance and offsetting tax expenditures with the expansion of previous measures, an increase in the taxation of foreign service providers, customs policy and administrative measures (Text Table 5). Tax arrears collection also remains an important revenue Over the medium-term, revenue mobilization will be underpinned by the new Medium-Term Revenue Strategy (MTRS) finalized in September, which aims to increase tax collection by 3 ppt of GDP by 2028 by expanding the tax base and improving the overall efficiency of the tax system. This would be achieved through the rationalization of tax expenditures, promoting tax compliances and identifying new niches, combatting fraud, and strengthening the technical capacity of tax administration.

Text Table 5. Benin: Estimated Additional Yields from Tax Measures in 2024
.(Percent of GDP)

Net Additional Yields Relative to the Previous Year (A+B+C)	**0.5**
A. Domestic taxation, *of which*	**0.6**
Removing payroll tax exemptions for public agencies	0.1
Expansion of standardized invoices to retail businesses	0.1
Clearance of domestic tax arrears	**0.4**
B. International taxation measures, *of which*	**0.4**
Application of transaction values to new goods	0.1
Improved control of customs valuation	0.1
Clearance of custom duties arrears	**0.2**
C. Revenue-reducing effects, incl. nominal GDP	**-0.5**

Sources: Beninese authorities and IMF staff estimates and projections
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- **Total expenditure.** Total expenditure will be higher in the near-term at 19.3 percent of GDP in 2023 (compared with 19.0 percent in the previous DSA), as the authorities use additional space provided by the fiscal adjustor under the EFF/ECF (see below) and increased use of grants to meet priority spending needs.

- **Fiscal adjustor.** The baseline overall deficit is now projected at 4.5 percent of GDP in 2023, compared with 4.3 percent in the previous DSA, as the authorities have mobilized an additional 0.2 ppt of GDP in external budget support. This has smoothed fiscal adjustment somewhat, with limited impact on the overall debt profile given the concessional nature of such financing. The deficit has the potential to increase up to 4.7 ppt of GDP if the authorities can mobilize further external concessional budget support as allowed under the Fund-supported program.

- **Current account deficit.** The current account deficit is expected to widen to 5.8 percent of GDP in 2023 in line with the previous DSA, reflecting a deterioration in the terms of trade. The current account deficit is expected to improve over the medium term, hovering close to 4 percent of GDP, supported by fiscal consolidation. This export assumptions in this DSA make further adjustments to account for ongoing reforms to boost competitiveness including the completion of far-reaching projects under the national development plan (PAG-II) like the expansion of the Port of Cotonou, exploring new trade opportunities with Nigeria, and accelerating the Special Economic Zone (SEZ), which should help raise exports in the long term, offsetting projected declines in cotton export receipts as international prices moderate. The projected long-term current account deficit averages 3.4 percent of GDP over 2029-43 (compared with 4.4 percent in the previous DSA). FDI is also expected to see modest gains in the medium-term, from 1.6 percent of GDP in 2023 to 1.8 percent of GDP in 2028, as reforms help improve investor confidence.

8. Consistent with the authorities' borrowing plan, the DSA continues to assume that the authorities will continue to maintain a prudent borrowing strategy, maximizing concessional resources to the extent possible, while also accounting for the recent increase in market issuances and updated multilateral financing (Text Table 6-7). Grant-equivalent financing is expected to decline on average over the long term as a share of GDP as Benin's relative income increases. Key changes from the previous DSA include:

- ***Multilateral financing***. The baseline includes financing from the IMF-supported EFF/ECF as well as a possible maximum envelope for the RSF, which would be disbursed over 2024-25 (see below). The DSA also includes financing from the World Bank in line with the latest IDA allocations as well as newly confirmed budget support from the AfDB and AFD.[12] The World Bank provided a US$80 million Cat-DDO in September 2023, which could provide Benin with financing at favorable terms in the event of natural disaster, although it is not included in the baseline given its disbursement being contingent on the materialization such a shocks (see Box 2).

- ***Bilateral and commercial financing***. Financing assumptions for bilateral and commercial financing have been updated based on the authorities' borrowing plan and the 2024 debt strategy, which considering disbursements for project financing anticipates financing at longer maturities and some commercial financing.

- ***Market financing.*** Given the authorities' intent to maintain regular market access, the DSA continues to assume such access but also assumes that the authorities will continue leveraging the SDG financing framework (including through reforms under the Fund-supported RSF) as well as the partial credit guarantee from the AfDB to secure more favorable terms, particularly in the medium term. In addition to the SDG loan over the summer, the framework replaces the US$500 million Eurobond issuance in 2025 with two 15-year US$350 million SDG loans in 2025 and 2027 on terms similar to the recent financing.[13] The authorities have US$150 million remaining in the current AfDB partial credit guarantee and could continue to seek out and leverage such opportunities. In the long term, it is assumed that international market issuances would average 1.2 ppt of GDP per year with terms evenly split between sustainability bonds and Eurobonds. These assumptions are contingent on market conditions, with the potential for additional issuances if conditions improve. The authorities also remain open to additional innovative financing opportunities for climate such as Green/Blue bonds.

- ***Domestic financing***. Given the recent SDG financing, a larger portion of public gross financing needs (around 85 percent compared with 60 percent in the previous DSA) will be externally financed, as the authorities use the proceeds to substitute domestic financing. While conditions on the regional market have tightened, Benin's pre-emptive issuances in 2022 (not included in the financing for 2023 under the baseline) provide an important contingency should market conditions tighten further (¶8). Over the

[12] Updated IDA assumptions reflect the IDA20 allocations and the fact that Benin has recently graduated to "gap" country status and is no longer eligible for new grants. They also include updates to the terms of IDA financing, including the assumption that a portion of the allocation will be in the form of shorter (12-year) maturity loans during FY23-25.

[13] SDG financing assumptions are cautious and based on the latest issuance, with a 5.0 percent interest rate and 15-year maturity with scope for improved terms if interest rates improve, compared with Eurobonds which are assumed to have a 6.0 percent interest rate and 11-year maturity (consistent with previous issuances and the authorities' prudent debt strategy).

long term, Benin is also expected to rely more on domestic sources of financing as the domestic debt market deepens.[14]

9. The Fund-supported RSF is expected to enhance debt sustainability by providing more cost-effective financing and supporting the acceleration of the climate agenda. The financing with an interest rate of 3.5 percent and maturity of 20 years (with a 10½ grace period) is expected to substitute more costly domestic financing, with the overall path of medium-term fiscal adjustment remaining unchanged. The RSF would thus improve the debt service profile, with a PV of about FCFA 101 billion, compared with a PV of FCFA 115 billion for domestic debt of equivalent amount, based on assumed terms on domestic debt in the DSA. Moreover, the RSF would also support reforms that enhance BoP stability and the population's resilience against climate shocks, limiting the impact of climate change on growth and fiscal and export revenues.

Text Table 6. Benin: Third Review External Borrowing Plan 2023
(Programmed Contracted Debt)

PPG external debt	**Volume of new debt in 2023**		**PV of new debt in 2023 (program purposes)**	
	FCFA billion	Percent	FCFA billion	Percent
By sources of debt financing	**909.5**	**100**	**619.9**	**100**
Concessional debt, of which	**530.8**	**58**	**269.0**	**43**
Multilateral debt	408.3	45	193.7	31
Bilateral debt	122.4	13	75.3	12
Non-concessional debt, of which	**378.7**	**42**	**350.9**	**57**
Semi-concessional	118.2	13	90.4	15
Commercial terms	260.5	29	260.5	42

10. Public debt is projected to decline over the medium to long term as a result of prudent fiscal policy and steady growth. Debt is expected to be around 54 percent of GDP at end-2023, reflecting fiscal policy accommodation to contain the socio-economic fallout from the protracted COVID-19 pandemic, Russia's invasion of Ukraine, and mitigation of security risks, public debt is projected to decline to 46 percent by 2033 as fiscal deficits are contained and growth converges to its potential. The debt trajectory is predicated on the authorities implementing a revenue-based fiscal consolidation to ensure convergence to WAEMU regional fiscal norms.

[14] This DSA assumes domestic financing will come mostly in the form of one-to-seven-year bonds with a small portion of longer maturities at rates from 6 to 7 percent, with some upside risks (including to substitute external financing) given recent issuance experience.

Text Table 7. Benin: Third Review External Borrowing Plan 2024
(Programmed Contracted Debt)

PPG external debt	Volume of new debt in 2024		PV of new debt in 2024 (program purposes)	
	FCFA billion	Percent	FCFA billion	Percent
By sources of debt financing	**912.0**	**100**	**619.7**	**100**
Concessional debt, of which	**574.2**	**63**	**328.4**	**53**
Multilateral debt	414.1	45	230.1	37
Bilateral debt	160.1	18	98.3	16
Non-concessional debt, of which	**337.8**	**37**	**291.3**	**47**
Semi-concessional	237.8	26	191.3	31
Commercial terms	100.0	11	100.0	16

11. Macro-fiscal projections are realistic (Figures 3-4). The three-year primary adjustment falls at the top quartile for past adjustments in LICs with IMF-supported programs, which remains realistic given that during the period Benin is recovering from large shocks, with adjustments supported reductions in one-off spending and recovery in revenues. The growth path does not exceed those derived from typical fiscal multipliers for LICs. Public and private investment rates are similar to the previous DSA as is the modest contribution of public investment to growth. While unexpected changes in public debt have been large over the last 5-years, these can be explained by significant shocks during the sample period including the 2019 Nigeria border closure and COVID-19. These have been largely driven by the primary deficit and other debt creating flows. In terms of drivers, GDP growth is expected to be debt-reducing in the projections; the real interest rate and primary deficit would be debt-increasing. This is in broadly in line with historical trends, though significant past contributions from residual factors could add to debt. The unanticipated substitution of domestic financing with less costly external financing due to changes in market conditions could lead to higher external debt (but ultimately a more manageable debt service profile), as illustrated by the large residual component of unexpected changes in external debt.

12. The macroeconomic outlook is subject to a number of risks, which remain tilted to the downside. Spillovers from policy shifts in Nigeria and the recent coup in Niger could be more severe than expected, further disrupting trade, increasing prices, and negatively impacting competitiveness. A shift in global risk appetite or further tightening of liquidity conditions on the regional security market could complicate medium-term rollover. Higher than anticipated security outlays could weigh heavily on the budget. Moreover, Benin remains susceptible to natural disasters and acute and chronic climate change risks.

COUNTRY CLASSIFICATION AND DETERMINATION OF STRESS TEST SCENARIOS

13. **Benin's debt carrying capacity continues to be classified as medium.** Based on a calculation of a composite indicator reflecting factors such as the 2022 WB CPIA index and the October 2023 WEO (real growth rates, reserve coverage, remittances, and world growth), Benin has a CI score of 2.98 (Text Table 8). As a result, this DSA continues to use the same external debt burden thresholds and total public benchmarks for countries with medium debt carrying capacity (Text Table 9).

14. **Stress tests generally follow standardized settings, with the addition of tailored stress tests to capture risks related to contingent liabilities, commodity prices, and market financing, and a customized scenario for natural disasters.** Given Benin's high vulnerability to natural disasters and climate change (particularly from flooding and coastal erosion), a customized natural disaster shock has been applied, reflecting adjustments to better tailor the test to Benin's exposure to climate shocks and integrating access to the World Bank Cat-DDO, which could provide access to more favorable financing in the event of such a shock (Box 2). Commodity exports (cotton) make up a significant part of the export base (35 percent of exports excluding reexported products in 2021), leaving it open to potential price shocks. Finally, outstanding Eurobonds may leave Benin exposed to rollover risk in the event of a change in global risk sentiment—though the current maturity profile mitigates this risk over the next two years.

Text Table 8. Benin: Calculation of Debt-Carrying Capacity

Components	Coefficients (A)	10-year average values (B)	CI Score components (A*B) = (C)	Contribution of components
CPIA	0.385	3.717	1.43	48%
Real growth rate (in percent)	2.719	6.056	0.16	6%
Import coverage of reserves (in percent)	4.052	39.591	1.60	54%
Import coverage of reserves^2 (in percent)	-3.990	15.674	-0.63	-21%
Remittances (in percent)	2.022	0.933	0.02	1%
World economic growth (in percent)	13.520	2.889	0.39	13%
CI Score			2.98	100%
CI rating			Medium	

Text Table 9. Benin: Debt Burden Thresholds and Benchmarks

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

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

15. **Given Benin's susceptibility to climate risks, an alternative scenario was also calibrated to assess the effects of climate change on debt sustainability over the long term in the event further action is not taken** (Box 2). The scenario is informed by shock scenarios in the World Bank Country Climate and Development Report (CCDR) under a pessimistic 'Dry/Hot' scenario and incorporates the dynamics of key macroeconomic variables while excluding RSF disbursements.

DEBT SUSTAINABILITY RESULTS

EXTERNAL DEBT SUSTAINABILITY

16. **All external debt burden indicators are below their policy-dependent thresholds in the baseline apart from a marginal one-off breach in the debt-service to revenue ratio in 2030 (Table 1, Figure 1).** The PV of total PPG external debt to GDP is expected to remain well below the threshold throughout the projection period, averaging 30 percent of GDP in 2023-27 and gradually starting to decline in 2030.[15] The PV of total PPG external debt to GDP will peak at 31 percent of GDP in 2027 (compared with a peak of 30 percent of GDP in the previous DSA). The debt service-to-revenue ratio will temporarily breach the threshold in 2030 at 19 percent (when large Eurobond repayments are falling due), which is discounted from the DSA analysis. However, the PV of debt-to-exports and PV of debt service-to-exports ratios both remain below their thresholds, peaking in 2027 and 2030, respectively.

17. **Stress tests highlight Benin's vulnerability to shocks, particularly those related to commodity prices, exports, and natural disasters.** All debt-burden indicators breach their thresholds under certain stress tests, with commodity price being the most severe shock across all four indicators. Export disaster shocks also cause significant breaches. These shocks illustrate risks posed by limited economic diversification. The natural disaster shock illustrates the exposure of Benin's debt to climate risks (see Box 2). Although the historical scenario is relatively more severe than the baseline, the calibration

[15] This DSA includes an update to the PV calculation methodology for existing Eurobond debt, which allows users to replace the PV of existing external debt by the nominal debt stock in instances where the grant element of a loan is zero. This change reduced the PV of external debt by an average of 0.8 ppt of GDP over the projection period and a peak of 2.5 ppt of GDP in 2024.

period of 2013–2022 captures particularly severe periods in Benin's economy including the impact of COVID-19, the Nigeria border closure, and the 2015 downturn. Moreover, compared with the historical record, continued efforts to mobilize revenues and active debt management are expected to help stabilize debt levels.

Box 2. Benin: Debt Sustainability and Climate Change[1]

This box draws on the World Bank CCDR and other tools to illustrate the cost of inaction in climate adaption in Benin. It finds that a climate shock would undermine the country's debt sustainability.

Tailored scenarios suggest that Benin's debt sustainability, while relatively resilient to one-off shocks, could be significantly imperiled in the long term absent decisive climate action. Climate change risks are incorporated into the DSA in a twofold manner through (i) a customized natural disaster stress test (calibrated in line with the shock used for the IMF DIGNAD[2] model) and (ii) an alternative no-adaptation scenario (based on World Bank CCDR simulations), reflecting recommendations from the draft RSF Guidance Note to account for long-term structural risks. While macro-fiscal assumptions underlying the DSA baseline scenario include estimates of the authorities' climate-related public investment, the authorities are not expected to take additional climate-related actions that would jeopardize PPG debt sustainability.

The natural disaster customized stress test reveals that the PV of debt-to-GDP ratio would increase in the event of a natural disaster, with the WB-financed contingent financing line mitigating the effect on debt sustainability. The shock is calibrated to simulate a catastrophic flood event like the one experienced by Benin in 2010, assuming a 4 percent one-off shock to external PPG debt-to-GDP ratio in the second year of the projection period, a 3 percent reduction of GDP growth, and a 3.5 percent reduction of export growth. Specific to Benin, the disbursement of the World Bank's Catastrophe Deferred Drawdown Option (Cat DDO), contingent financing upon such a shock (see ¶8), is included in this stress test. With a maturity of 30 years (5 years grace period) and an interest rate of 2.5 percent, the Cat DDO financing line would provide immediate liquidity on favorable terms while other funds are being mobilized. Nevertheless, even with the mitigating role of the Cat-DDO the PV of PPG debt-to-GDP ratio would be about 5.2 ppt higher over the long term than in the baseline (Figure 2).

Under the no-adaptation scenario, public debt goes on an unsustainable trajectory (Figures 7-8), highlighting the potential cost of not undertaking decisive adaptation policies today. Projections from the World Bank CCDR[3] for pessimistic (hot/dry) simulations were used to reflect adverse climate impacts, totaling real GDP losses of up to -16 percent of GDP by 2043, mainly through labor heat stress and productivity, with lower production impacting exports and revenues. While reduced crop yields and the impact of heat stress on labor productivity are the largest contributors to GDP losses, the increased costs of physical capital repair and renewal due to inland flooding and rising sea levels are also included in the model.[4] Despite the adherence to the WAEMU fiscal deficit ceiling of 3 percent in the CCDR simulation (the CCDR baseline projections were aligned with the EFF/ECF), the public debt burden under this scenario would increase dramatically and quickly become unsustainable, with the PV of debt-to-GDP ratio continuously above its threshold starting in 2030, mainly due to rising GDP losses along the projection horizon in the absence of strong adaptation policies.

[1/] Prepared by Markus Specht (AFR)

[2]/Debt, Investment, Growth, and Natural Disasters Model (see PN Annex IV).

[3/] Publication forthcoming.

[4/] The CCDR MANAGE is a single-country recursive dynamic computable general equilibrium (CGE) model, designed to focus on energy, emissions, and climate change. Climate change is likely to have direct and indirect effects on the Beninese economy. The former are introduced in the macro and micro models through damage vectors (i.e., channels such as sectoral and labor productivity, labor, and capital supplies) estimated using a biophysical model (see CCDR chapter 3.1). The Benin CCDR models 10 damage channels: 1. heat stress and labor productivity, 2. heat-related human health shock, 3. Water, sanitation, and hygiene, 4. clean cooking, 5. livestock yields, 6. rainfed crops, 7. erosion, 8. inland flooding, 9. sea level rise and storm surge and 10. tourism. The modeling of the channels is based on country-specific climate scenarios. These estimated damages are subsequently introduced as shocks into the CGE to estimate the effect on GDP and other macroeconomic aggregates. Microsimulations are used to model the subsequent impact on poverty.

18. The granularity assessment indicates that Benin has limited space to absorb shocks (Figure 5). Under the module, which allows qualifying the moderate risk of debt-distress, Benin is assessed as having limited space in the debt service-to-revenue and debt service-to- export indicators, which would breach the threshold under a median observed shock scenario, resulting in a downgrade to high-risk. This compares with the previous DSA, where only the debt service-to-revenue indicator had limited space to absorb shocks.

19. The market-financing module suggests that market risks are moderate (Figure 6). Although EMBI spreads are above the benchmark, reflecting the recent global financial market volatility, gross financing needs remain well below the respective benchmark, and potential for heightened liquidity needs is moderate. The debt-service to revenue and debt service-to-export ratios would exceed their thresholds in 2030 under the market financing shock, given the repayment profile discussed above (which by design does not incorporate possible liability management operations that would help manage these risks).

TOTAL PUBLIC DEBT SUSTAINABILITY

20. Total public PPG remains below its respective benchmark in the baseline (Figure 2 and Table 2). The present value of public debt over the next 10 years averages 40 percent, well below the 55 percent benchmark but slightly higher than the previous DSA at 39 percent, given the reliance on more market-based financing (albeit lower than if the authorities were only able to access financing in the regional market).

21. Stress tests indicate that public debt is most vulnerable to commodity price shocks and natural disasters. For the PV of debt-to-GDP ratio, a commodity price shock would be the most extreme shock, with the PV of debt-to-GDP breaching the benchmark from 2027 onwards and significant increases in the debt-to-revenue ratio. A natural disaster shock would also increase debt service-to-revenue ratios.

RISK RATING AND VULNERABILITIES

22. This DSA finds that Benin remains at moderate risk of external and overall debt distress, unchanged from the previous DSA. Although external debt indicators have increased more due to increased reliance on external borrowing on comparatively more favorable terms than the regional market, they remain below their high-risk thresholds and benchmarks in the baseline, apart from a one-off breach to the debt service-to-revenue indicator in 2030, last observed in the December 2022 DSA. Debt levels, though relatively manageable, remain vulnerable to shocks. As evidenced by the high debt service to revenues ratio, large amortization payments and the low revenue base may pose liquidity risks. Lower than expected revenues or exports, including due to policy implementation lags or if efforts to boost competitiveness take time to bear fruit, as well as further shifts in market sentiment that increase borrowing and rollover costs could heighten debt risks.

23. Sustained revenue mobilization efforts along with a prudent borrowing and debt management strategy will be important for mitigating the risk of debt distress. As highlighted by the granularity assessment, Benin has limited space to absorb shocks owing to the narrow space between the debt service ratios and high-risk thresholds in years where large Eurobond bullet repayments are due. Continuing proactive liability management to facilitate the rollover of these payments, maximizing concessional borrowing, and implementing measures to bring tax revenues closer to Benin's potential will help mitigate risks to debt distress. The authorities should also continue to leverage their existing SDG financing framework to access financing, including climate-related, on more favorable terms while ensuring a manageable external and domestic financing mix.

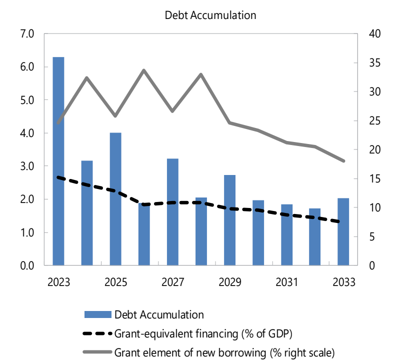
AUTHORITIES' VIEWS

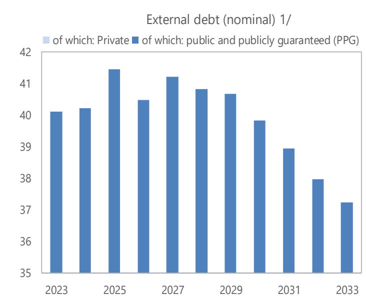
24. The authorities agree with the assessment that Benin remains at moderate risk of external debt distress. They are of the view that domestic financing conditions will improve structurally in the medium term (with longer maturities and lower costs). They emphasize that the debt strategy will would continue to ensure that financing needs are met at the lowest possible cost—borrowing on the international capital market would only occur at more favorable conditions than those on the regional security market. The authorities are of the view that currency risk from external borrowing is limited by the fact that a large share of borrowing is conducted in euros to which the CFA franc is pegged. They remain committed to preserving debt sustainability, mitigating refinancing risks and limiting borrowing costs through a combination of revenue mobilization, active debt management and prudent borrowing.

Table 1. Benin: External Debt Sustainability Framework, Baseline Scenario, 2020–2043
(in percent of GDP, unless otherwise indicated)

	Actual			Projections								Average 8/	
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2033	2043	Historical	Projections
External debt (nominal) 1/	28.4	36.8	37.6	40.1	40.2	41.5	40.5	41.2	40.8	37.2	28.1	22.2	39.9
of which: public and publicly guaranteed (PPG)	28.4	36.8	37.6	40.1	40.2	41.5	40.5	41.2	40.8	37.2	28.1	22.2	39.9
Change in external debt	3.2	8.4	0.8	2.5	0.1	1.2	-1.0	0.7	-0.4	-0.7	-1.2		
Identified net debt-creating flows	0.7	2.6	8.6	5.6	4.8	4.3	4.2	3.9	3.7	3.7	5.0	5.4	4.0
Non-interest current account deficit	1.3	3.4	5.4	4.9	4.5	4.0	3.8	3.4	3.1	2.7	2.7	4.2	3.4
Deficit in balance of goods and services	2.8	4.4	6.3	6.0	5.8	5.3	5.2	4.8	4.7	4.3	4.3	5.6	4.9
Exports	22.4	23.5	23.9	22.1	22.1	21.9	21.8	21.8	21.9	22.3	22.3		
Imports	25.1	27.8	30.2	28.1	27.9	27.2	27.0	26.6	26.6	26.6	26.6		
Net current transfers (negative = inflow)	-1.8	-1.3	-1.2	-0.9	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.6	-1.0
of which: official	-1.2	-0.5	0.0	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1		
Other current account flows (negative = net inflow)	0.3	0.3	0.2	-0.2	-0.3	-0.2	-0.3	-0.3	-0.5	-0.5	-0.5	0.2	-0.4
Net FDI (negative = inflow)	1.0	1.7	1.9	1.7	1.6	1.6	1.7	1.8	1.9	2.1	2.8	1.6	1.9
Endogenous debt dynamics 2/	-1.6	-2.5	1.3	-1.0	-1.3	-1.3	-1.4	-1.3	-1.3	-1.1	-0.6		
Contribution from nominal interest rate	0.5	0.7	0.8	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.9		
Contribution from real GDP growth	-0.9	-1.8	-2.3	-1.9	-2.2	-2.2	-2.3	-2.2	-2.3	-2.1	-1.5		
Contribution from price and exchange rate changes	-1.2	-1.5	2.9	...	...	...	...	...	...	...	...		
Residual 3/	2.5	5.8	-7.8	-3.0	-4.7	-3.1	-5.2	-3.1	-4.1	-4.4	-6.2	-2.7	-4.1
of which: exceptional financing	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Sustainability indicators													
PV of PPG external debt-to-GDP ratio	...	...	26.5	29.0	29.4	30.8	30.2	31.0	30.7	29.0	24.1		
PV of PPG external debt-to-exports ratio	...	...	110.9	131.6	132.9	140.7	138.3	142.1	140.5	130.1	107.9		
PPG debt service-to-exports ratio	5.5	8.7	8.7	9.4	11.6	11.7	10.9	9.8	10.7	11.5	9.7		
PPG debt service-to-revenue ratio	9.7	15.5	15.0	14.9	17.9	17.3	15.8	13.7	14.5	13.8	11.3		
Gross external financing need (Billion of U.S. dollars)	0.5	1.3	1.6	1.7	1.9	1.9	2.0	2.0	2.2	3.2	6.9		
Key macroeconomic assumptions													
Real GDP growth (in percent)	3.8	7.2	6.3	5.6	6.0	5.9	6.0	5.9	6.0	5.9	5.4	5.5	5.9
GDP deflator in US dollar terms (change in percent)	4.9	5.4	-7.3	6.8	3.3	2.3	2.2	1.6	1.6	2.0	2.0	-0.6	2.5
Effective interest rate (percent) 4/	2.1	3.0	2.0	2.5	2.5	2.4	2.5	2.4	2.5	2.6	3.3	1.9	2.5
Growth of exports of G&S (US dollar terms, in percent)	-2.3	18.6	0.1	4.3	9.7	7.4	8.0	7.7	7.8	8.2	7.5	9.1	7.9
Growth of imports of G&S (US dollar terms, in percent)	-8.6	25.1	6.9	5.0	8.7	5.7	7.6	6.0	7.6	8.0	7.5	8.4	7.3
Grant element of new public sector borrowing (in percent)	...	...	...	24.6	32.4	25.8	33.6	26.6	33.0	18.0	10.0	...	25.8
Government revenues (excluding grants, in percent of GDP)	12.7	13.2	13.8	13.9	14.3	14.7	15.1	15.6	16.1	18.5	19.2	12.6	16.1
Aid flows (in Billion of US dollars) 5/	0.3	0.2	0.1	0.8	0.8	0.8	0.8	0.8	0.8	0.5	0.6		
Grant-equivalent financing (in percent of GDP) 6/	...	...	...	2.7	2.4	2.2	1.8	1.9	1.9	1.3	0.8	...	1.9
Grant-equivalent financing (in percent of external financing) 6/	...	...	...	32.3	40.0	33.5	43.6	35.3	42.5	30.1	31.4	...	35.3
Nominal GDP (Billion of US dollars)	16	18	17	20	22	23	25	27	29	43	90		
Nominal dollar GDP growth	8.9	12.9	-1.5	12.8	9.6	8.4	8.3	7.7	7.6	8.0	7.5	4.9	8.6
Memorandum items:													
PV of external debt 7/	...	...	26.5	29.0	29.4	30.8	30.2	31.0	30.7	29.0	24.1		
In percent of exports	...	...	110.9	131.6	132.9	140.7	138.3	142.1	140.5	130.1	107.9		
Total external debt service-to-exports ratio	5.5	8.7	8.7	9.4	11.6	11.7	10.9	9.8	10.7	11.5	9.7		
PV of PPG external debt (in Billion of US dollars)			4.6	5.7	6.3	7.2	7.6	8.4	9.0	12.5	21.7		
(PVt-PVt-1)/GDPt-1 (in percent)				6.3	3.2	4.0	1.9	3.2	2.1	2.0	0.9		
Non-interest current account deficit that stabilizes debt ratio	-1.9	-5.0	4.6	2.4	4.4	2.8	4.8	2.6	3.5	3.4	4.0		

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





Sources: Country authorities; and staff estimates and projections.

1/ Includes both public and private sector external debt.

2/ Derived as $[r - g - \rho(1+g)]/(1+g+\rho+g\rho)$ times previous period debt ratio, with r = nominal interest rate; g = real GDP growth rate, and ρ = growth rate of GDP deflator in U.S. dollar terms.

3/ Includes exceptional financing (i.e., changes in arrears and debt relief); changes in gross foreign assets; and valuation adjustments. For projections also includes contribution from price and exchange rate changes.

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

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

6/ Grant-equivalent financing includes grants provided directly to the government and through new borrowing (difference between the face value and the PV of new debt).

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

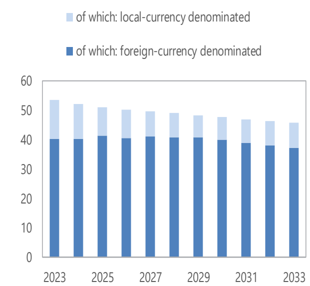
8/ Historical averages are generally derived over the past 10 years, subject to data availability, whereas projections averages are over the first year of projection and the next 10 years.

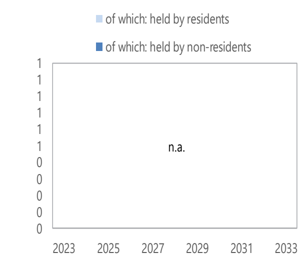
Table 2. Benin: Public Sector Debt Sustainability Framework, Baseline Scenario, 2020-43
(In percent of GDP, unless otherwise indicated)

	Actual			Projections									Average 6/	
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2033	2043		Historical	Projections
Public sector debt 1/	46.1	50.3	54.2	53.5	52.3	51.1	50.1	49.6	49.0	45.8	42.3		38.0	49.1
of which: external debt	28.4	36.8	37.6	40.1	40.2	41.5	40.5	41.2	40.8	37.2	28.1		22.2	39.9
Change in public sector debt	4.9	4.1	3.9	-0.7	-1.3	-1.2	-0.9	-0.6	-0.5	-0.6	-0.2			
Identified debt-creating flows	1.4	3.9	7.1	-0.4	-0.7	-1.0	-0.9	-0.7	-0.7	-0.5	-0.2		2.4	-0.7
Primary deficit	2.7	3.5	3.9	2.8	2.1	1.3	1.4	1.5	1.5	1.4	1.0		2.4	1.6
Revenue and grants	14.4	14.1	14.3	14.8	15.0	15.4	15.7	16.3	16.7	19.1	19.9		13.4	16.8
of which: grants	1.7	0.9	0.5	0.8	0.7	0.7	0.6	0.6	0.6	0.6	0.6			
Primary (noninterest) expenditure	17.1	17.6	18.2	17.6	17.1	16.8	17.1	17.7	18.2	20.6	20.9		15.8	18.4
Automatic debt dynamics	-3.3	0.5	-0.2	-3.1	-2.8	-2.4	-2.3	-2.2	-2.2	-2.0	-1.2			
Contribution from interest rate/growth differential	-0.9	-2.0	-2.9	-3.1	-2.8	-2.4	-2.3	-2.2	-2.2	-2.0	-1.2			
of which: contribution from average real interest rate	0.7	1.1	0.0	-0.3	0.2	0.5	0.5	0.6	0.6	0.6	1.0			
of which: contribution from real GDP growth	-1.5	-3.1	-3.0	-2.9	-3.0	-2.9	-2.9	-2.8	-2.8	-2.6	-2.2			
Contribution from real exchange rate depreciation	-2.4	2.5	2.7	...	...	...	...	...	...	...	...			
Other identified debt-creating flows	1.9	-0.1	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.5	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)	-0.1	-0.1	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)	2.0	0.0	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Residual	3.5	0.3	-3.2	-0.3	-0.5	-0.2	0.0	0.2	0.2	0.0	0.0		1.0	-0.1
Sustainability indicators														
PV of public debt-to-GDP ratio 2/	...	...	42.9	42.8	41.6	40.6	40.0	39.7	39.3	37.9	38.5			
PV of public debt-to-revenue and grants ratio	...	...	300.1	289.4	277.9	262.9	254.9	243.8	234.6	198.1	194.0			
Debt service-to-revenue and grants ratio 3/	42.5	76.7	60.7	40.2	33.6	37.0	24.8	31.1	22.0	22.9	26.2			
Gross financing need 4/	10.8	14.2	16.0	8.7	7.1	7.1	5.3	6.5	5.2	5.8	6.2			
Key macroeconomic and fiscal assumptions														
Real GDP growth (in percent)	3.8	7.2	6.3	5.6	6.0	5.9	6.0	5.9	6.0	5.9	5.4		5.5	5.9
Average nominal interest rate on external debt (in percent)	2.1	2.8	2.1	2.5	2.5	2.4	2.5	2.4	2.5	2.7	3.4		1.9	2.5
Average real interest rate on domestic debt (in percent)	3.5	7.2	8.7	1.4	1.5	3.2	3.5	4.1	4.2	4.0	4.3		4.9	3.4
Real exchange rate depreciation (in percent, + indicates depreciation)	-9.8	9.3	8.0	...	...	...	...	...	...	...	...		3.4	...
Inflation rate (GDP deflator, in percent)	2.9	1.6	4.1	3.9	3.9	2.3	2.0	1.5	1.5	2.0	2.0		1.1	2.3
Growth of real primary spending (deflated by GDP deflator, in percent)	36.7	10.3	9.7	2.0	3.0	4.2	8.3	9.6	9.0	8.3	5.2		9.5	7.1
Primary deficit that stabilizes the debt-to-GDP ratio 5/	-2.2	-0.7	0.0	3.4	3.3	2.5	2.4	2.0	2.0	2.0	1.3		-1.0	2.4
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: Country authorities; and staff estimates and projections.

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

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

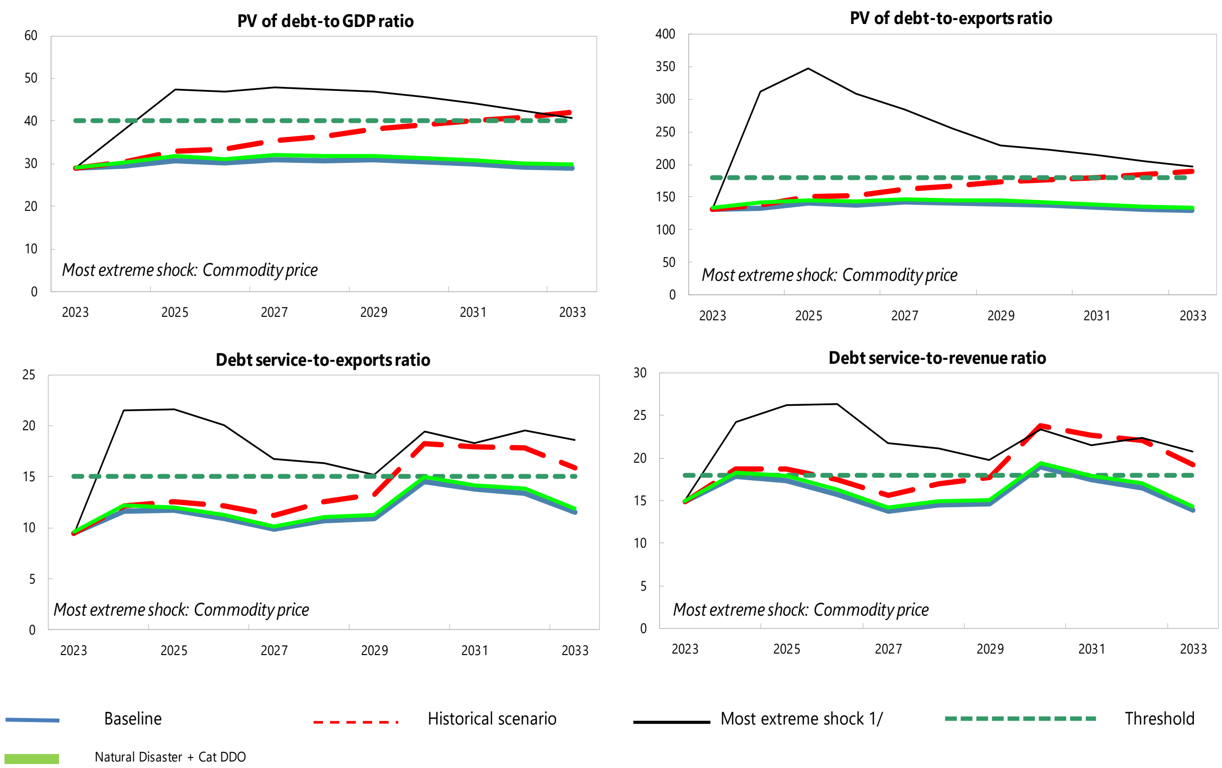
3/ Debt service is defined as the sum of interest and amortization of medium and long-term, and short-term debt.

4/ Gross financing need is defined as the primary deficit plus debt service plus the stock of short-term debt at the end of the last period and other debt creating/reducing flows.

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

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

Figure 1. Benin: Indicators of Public Guaranteed External Debt Under Alternatives Scenarios, 2023–2033[2]



Customization of Default Settings	Size	Interactions
Tailored Stress		
Combined CL	Yes	
Natural disaster	n.a.	n.a.
Commodity price	No	No
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 on additional financing needs resulting from the stress tests*	Default	User defined
Shares of marginal debt		
External PPG MLT debt	100%	
Terms of marginal debt		
Avg. nominal interest rate on new borrowing in USD	2.7%	2.7%
USD Discount rate	5.0%	5.0%
Avg. maturity (incl. grace period)	23	23
Avg. grace period	7	7

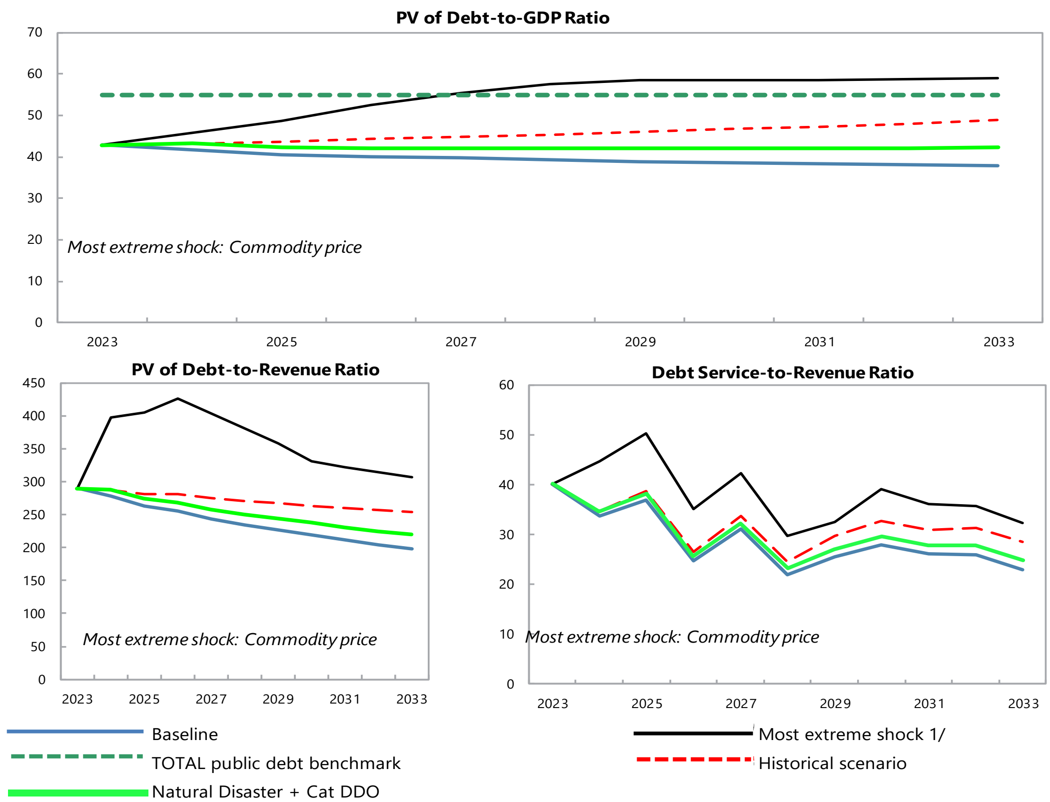
* Note: All the additional financing needs generated by the shocks under the stress tests are assume to be covered by PPG external MLT debt in the external DSA. Default terms of marginal debt are based on baseline 10-year projections.

Sources: Country authorities and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in or before 2032. The stress test with a one-off breach is also presented (if any), while the one-off breach is deemed away for mechanical signals. When a stress test with a one-off breach happens to be the most extreme shock even after disregarding the one-ff breach, only that stress test (with a one-off breach) would be presented.

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

Figure 2. Benin: Indicators of Public Debt Under Alternatives Scenarios, 2023–2033



Borrowing assumptions on additional financing needs resulting from the stress tests*	Default	User defined
Shares of marginal debt		
External PPG medium and long-term	72%	72%
Domestic medium and long-term	26%	26%
Domestic short-term	1%	1%
Terms of marginal debt		
External MLT debt		
Avg. nominal interest rate on new borrowing in USD	2.7%	2.7%
Avg. maturity (incl. grace period)	23	23
Avg. grace period	7	7
Domestic MLT debt		
Avg. real interest rate on new borrowing	4.1%	4.1%
Avg. maturity (incl. grace period)	4	4
Avg. grace period	3	3
Domestic short-term debt		
Avg. real interest rate	3.2%	3.2%

* 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: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in or before 2033. The stress test with a one-off breach is also presented (if any), while the one-off breach is deemed away for mechanical signals. When a stress test with a one-off breach happens to be the most exterme shock even after disregarding the one-off breach, only that stress test (with a one-off breach) would be presented.

Table 3. Benin: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2023–2033 (percent of GDP)

	Projections 1/										
	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
PV of debt-to GDP ratio											
Baseline	29	29	31	30	31	31	31	30	30	29	29
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2023-2033 2/	29	30	33	33	35	36	38	39	**40**	**41**	**42**
Natural Disaster Shock with Cat DDO	29	30	32	31	32	32	32	31	31	30	30
B. Bound Tests											
B1. Real GDP growth	29	30	33	32	33	33	33	33	32	31	31
B2. Primary balance	29	31	35	34	35	35	35	34	34	33	33
B3. Exports	29	32	37	37	37	37	37	36	35	35	34
B4. Other flows 3/	29	30	32	32	32	32	32	32	31	30	30
B5. Depreciation	29	37	36	35	36	36	36	36	35	34	34
B6. Combination of B1-B5	29	33	34	33	34	34	34	34	33	32	32
C. Tailored Tests											
C1. Combined contingent liabilities	29	35	36	35	36	37	37	36	35	35	34
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	29	38	**47**	**47**	**48**	**47**	**47**	**46**	**44**	**42**	**41**
C4. Market Financing	29	33	34	34	35	34	34	34	33	32	32
Threshold	40	40	40	40	40	40	40	40	40	40	40
PV of debt-to-exports ratio											
Baseline	132	133	141	138	142	141	140	138	135	132	130
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2023-2033 2/	132	137	150	153	162	166	173	177	**181**	**184**	**189**
Natural Disaster Shock with Cat DDO	133	141	145	143	147	145	144	142	139	135	134
B. Bound Tests											
B1. Real GDP growth	132	133	141	138	142	141	140	138	135	132	130
B2. Primary balance	132	138	159	156	160	158	158	155	152	148	146
B3. Exports	132	165	**220**	**216**	**220**	**216**	**214**	**210**	**205**	**199**	**195**
B4. Other flows 3/	132	136	148	145	148	147	146	143	140	137	135
B5. Depreciation	132	133	129	127	132	130	130	128	126	123	122
B6. Combination of B1-B5	132	150	143	159	163	161	161	158	155	151	149
C. Tailored Tests											
C1. Combined contingent liabilities	132	157	164	161	165	167	166	162	159	156	153
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	132	**312**	**347**	**308**	**284**	**255**	**230**	**223**	**215**	**206**	**197**
C4. Market Financing	132	133	141	139	143	141	140	137	134	131	129
Threshold	180	180	180	180	180	180	180	180	180	180	180
Debt service-to-exports ratio											
Baseline	9	12	12	11	10	11	11	15	14	13	11
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2023-2033 2/	9	12	13	12	11	13	13	**18**	**18**	**18**	**16**
Natural Disaster Shock with Cat DDO	10	12	12	11	10	11	11	15	14	14	12
B. Bound Tests											
B1. Real GDP growth	9	12	12	11	10	11	11	15	14	13	11
B2. Primary balance	9	12	12	12	11	12	12	**15**	15	14	13
B3. Exports	9	13	**16**	**15**	14	**15**	**15**	**20**	**19**	**19**	**17**
B4. Other flows 3/	9	12	12	11	10	11	11	15	14	14	12
B5. Depreciation	9	12	12	11	9	10	11	14	13	13	11
B6. Combination of B1-B5	9	12	13	13	11	12	12	**17**	**16**	**16**	13
C. Tailored Tests											
C1. Combined contingent liabilities	9	12	12	12	11	11	12	**15**	15	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	9	**21**	**22**	**20**	**17**	**16**	**15**	**19**	**18**	**20**	**19**
C4. Market Financing	9	12	12	11	10	11	14	**17**	14	13	11
Threshold	15	15	15	15	15	15	15	15	15	15	15
Debt service-to-revenue ratio											
Baseline	15	18	17	16	14	14	15	**19**	17	16	14
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2023-2033 2/	15	**19**	**19**	18	16	17	18	**24**	**23**	**22**	**19**
Natural Disaster Shock with Cat DDO	15	**18**	18	16	14	15	15	**19**	18	17	14
B. Bound Tests	15	**18**	18	16	14	15	15	**19**	18	17	14
B1. Real GDP growth	15	**19**	**19**	17	15	16	16	**20**	**19**	18	15
B2. Primary balance	15	18	18	17	15	16	16	**20**	**18**	18	15
B3. Exports	15	**18**	**18**	17	15	16	16	**20**	**19**	**18**	16
B4. Other flows 3/	15	18	17	16	14	15	15	**19**	18	17	14
B5. Depreciation	15	**22**	**22**	**19**	17	18	18	**23**	**21**	**20**	16
B6. Combination of B1-B5	15	**19**	**19**	17	15	16	16	**21**	**19**	**19**	15
C. Tailored Tests											
C1. Combined contingent liabilities	15	18	**19**	17	15	15	16	**20**	**18**	17	15
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	15	**24**	**26**	**26**	**22**	**21**	**20**	**23**	**21**	**22**	**21**
C4. Market Financing	15	18	17	16	15	15	**19**	**22**	18	16	14
Threshold	18	18	18	18	18	18	18	18	18	18	18

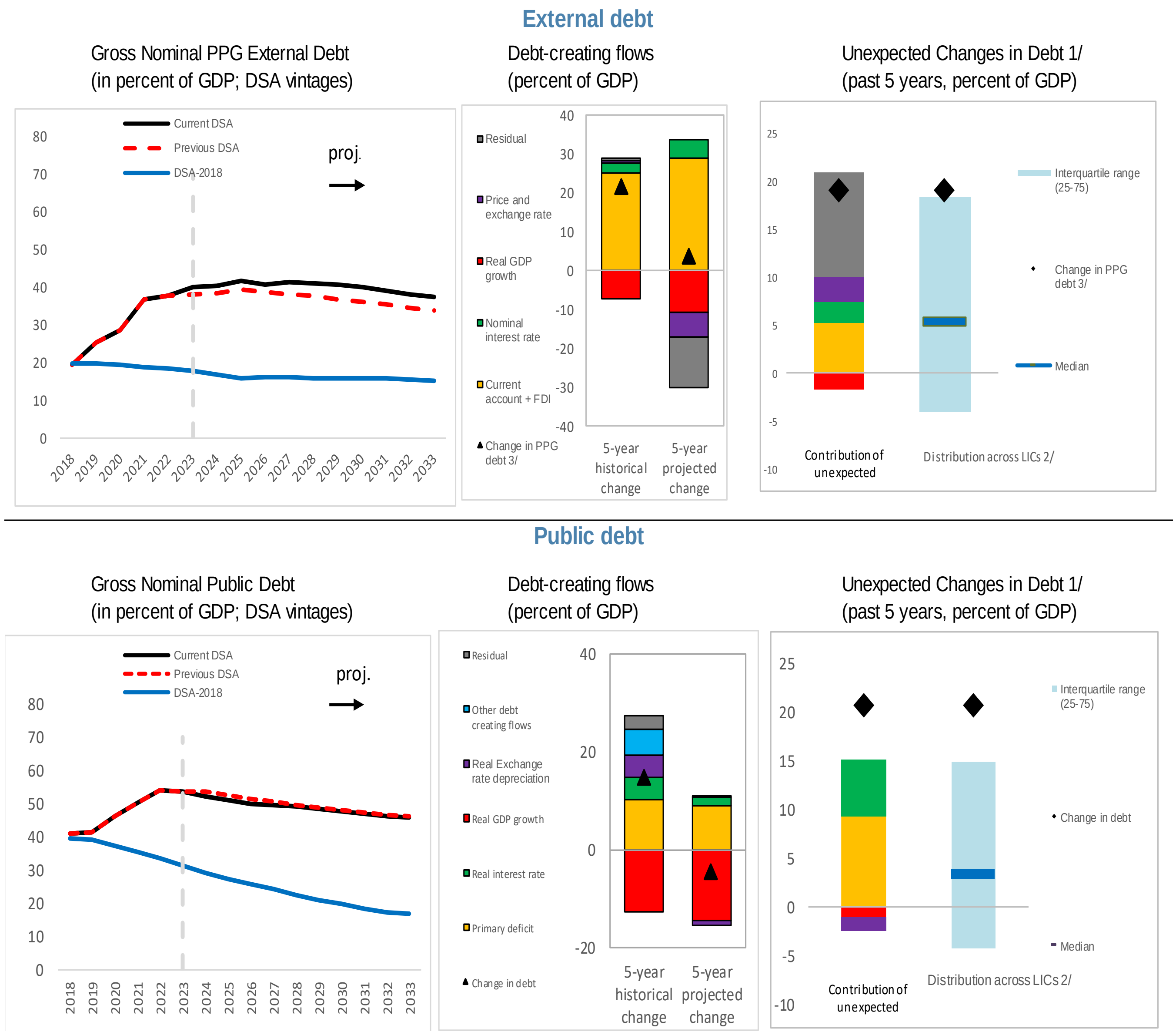
Sources: Country authorities; and staff estimates and projections.
1/ A bold value indicates a breach of the threshold.
2/ Variables include real GDP growth, GDP deflator (in U.S. dollar terms), non-interest current account in percent of GDP, and non-debt creating flows.
3/ Includes official and private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

Table 4. Benin: Sensitivity Analysis for Key Indicators of Public Debt, 2023–2033 (percent of GDP)

	Projections 1/										
	2023	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**
PV of Debt-to-GDP Ratio											
Baseline	43	42	41	40	40	39	39	39	38	38	38
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2023-2033 2/	43	43	44	44	45	45	46	47	47	48	49
Natural Disaster Shock with Cat DDO	43	43	42	42	42	42	42	42	42	42	42
B. Bound Tests											
B1. Real GDP growth	43	44	45	45	46	46	47	47	48	48	49
B2. Primary balance	43	43	46	45	45	44	44	43	43	42	42
B3. Exports	43	44	47	46	45	45	44	44	43	43	42
B4. Other flows 3/	43	42	42	41	41	41	40	40	39	39	39
B5. Depreciation	43	48	45	43	42	40	38	37	35	34	33
B6. Combination of B1-B5	43	41	43	42	41	41	40	39	39	38	38
C. Tailored Tests											
C1. Combined contingent liabilities	43	50	48	47	47	46	45	45	44	44	43
C2. Natural disaster	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C3. Commodity price	43	46	49	52	**55**	**57**	**59**	**58**	**59**	**59**	**59**
C4. Market Financing	43	42	41	40	40	39	39	38	38	38	38
TOTAL public debt benchmark	55	55	55	55	55	55	55	55	55	55	55
PV of Debt-to-Revenue Ratio											
Baseline	289	278	263	255	244	235	227	219	211	204	198
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2023-2033 2/	289	288	282	281	275	270	267	263	260	256	254
Natural Disaster Shock with Cat DDO	40	35	38	26	32	23	27	30	28	28	25
B. Bound Tests											
B1. Real GDP growth	289	291	290	287	280	275	272	267	262	258	255
B2. Primary balance	289	289	298	288	275	264	254	244	234	226	218
B3. Exports	289	293	303	292	279	268	258	248	238	229	220
B4. Other flows 3/	289	283	273	264	252	243	235	226	218	210	203
B5. Depreciation	289	323	295	277	257	239	224	208	194	181	171
B6. Combination of B1-B5	289	277	276	266	253	242	232	223	213	205	198
C. Tailored Tests											
C1. Combined contingent liabilities	289	331	312	302	288	274	265	254	244	235	227
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	289	397	405	427	404	381	358	331	322	314	307
C4. Market Financing	289	278	263	255	245	236	227	218	210	203	197
Debt Service-to-Revenue Ratio											
Baseline	40	34	37	25	31	22	26	28	26	26	23
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2023-2033 2/	40	35	39	27	34	25	30	33	31	31	28
Natural Disaster Shock with Cat DDO	40	35	38	26	32	23	27	30	28	28	25
B. Bound Tests											
B1. Real GDP growth	40	35	40	27	34	25	30	32	31	31	28
B2. Primary balance	40	34	38	27	33	26	30	30	28	28	25
B3. Exports	40	34	38	26	32	23	27	29	27	27	25
B4. Other flows 3/	40	34	37	25	31	22	26	28	26	26	23
B5. Depreciation	40	35	41	29	34	26	29	33	31	30	26
B6. Combination of B1-B5	40	33	37	25	31	22	28	28	26	26	23
C. Tailored Tests											
C1. Combined contingent liabilities	40	34	40	27	33	35	28	30	28	29	24
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	40	45	50	35	42	30	33	39	36	36	32
C4. Market Financing	40	34	37	25	32	23	30	31	26	26	23

Sources: Country authorities; and staff estimates and projections.
1/ A bold value indicates a breach of the benchmark.
2/ Variables include real GDP growth, GDP deflator and primary deficit in percent of GDP.
3/ Includes official and private transfers and FDI.

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

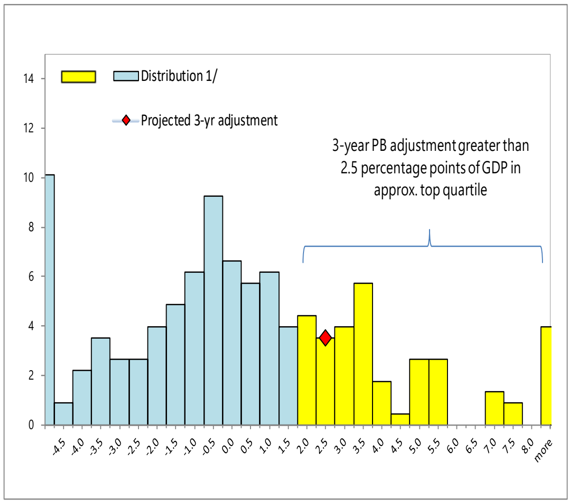


Sources: Country authorities; and staff estimates and projections.

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.

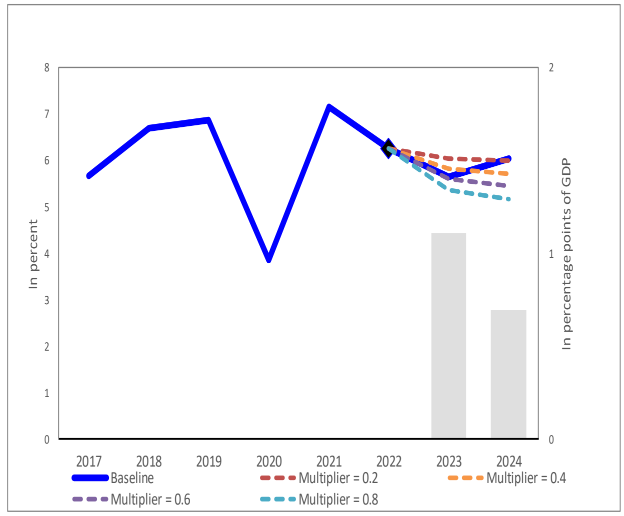
Figure 4. Benin: Realism Tools

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



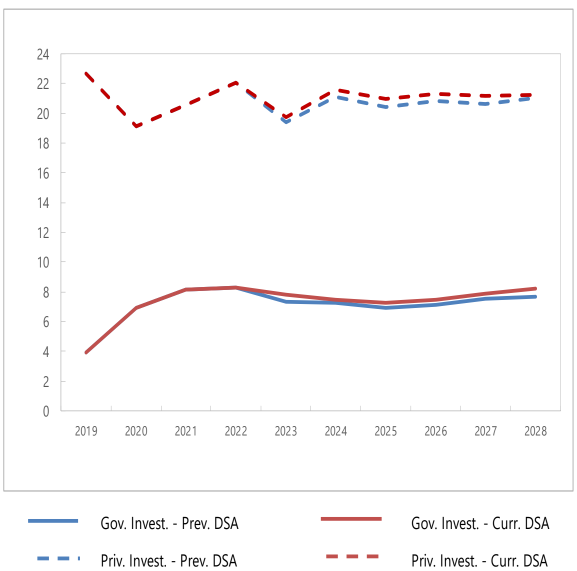
1/ Data cover Fund-supported programs for LICs (excluding emergency financing) approved since 1990. The size of 3-year adjustment from program inception is found on the horizontal axis; the percent of sample is found on the vertical axis.

Fiscal Adjustment and Possible Growth Paths 1/

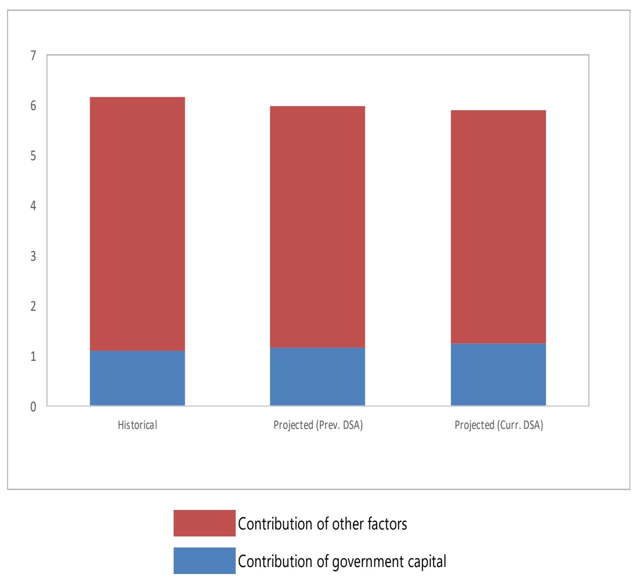


1/ Bars refer to annual projected fiscal adjustment (right-hand side scale) and lines show possible real GDP growth paths under different fiscal multipliers (left-hand side scale).

Public and Private Investment Rates
(percent of GDP)



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



Sources: Country authorities; and staff estimates and projections

Figure 5. Benin: Qualification of the Moderate Category, 2023–2033 1/

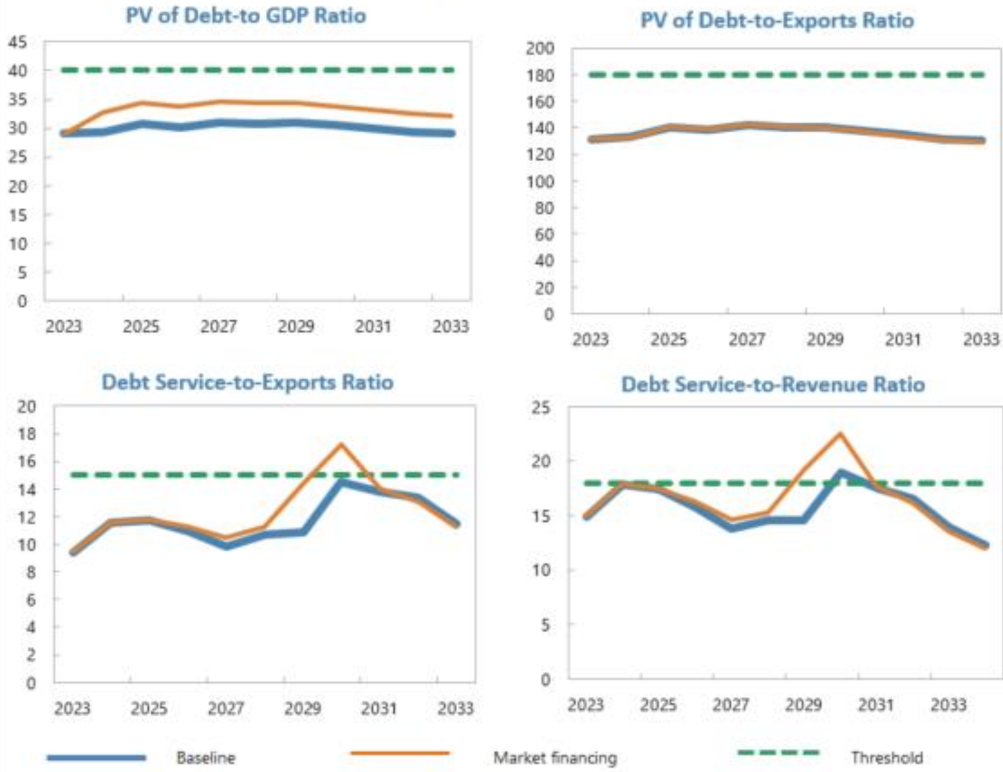
Sources: Country authorities; and staff estimates and projections.

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

Figure 6. Benin: Market-Financing Risk Indicators

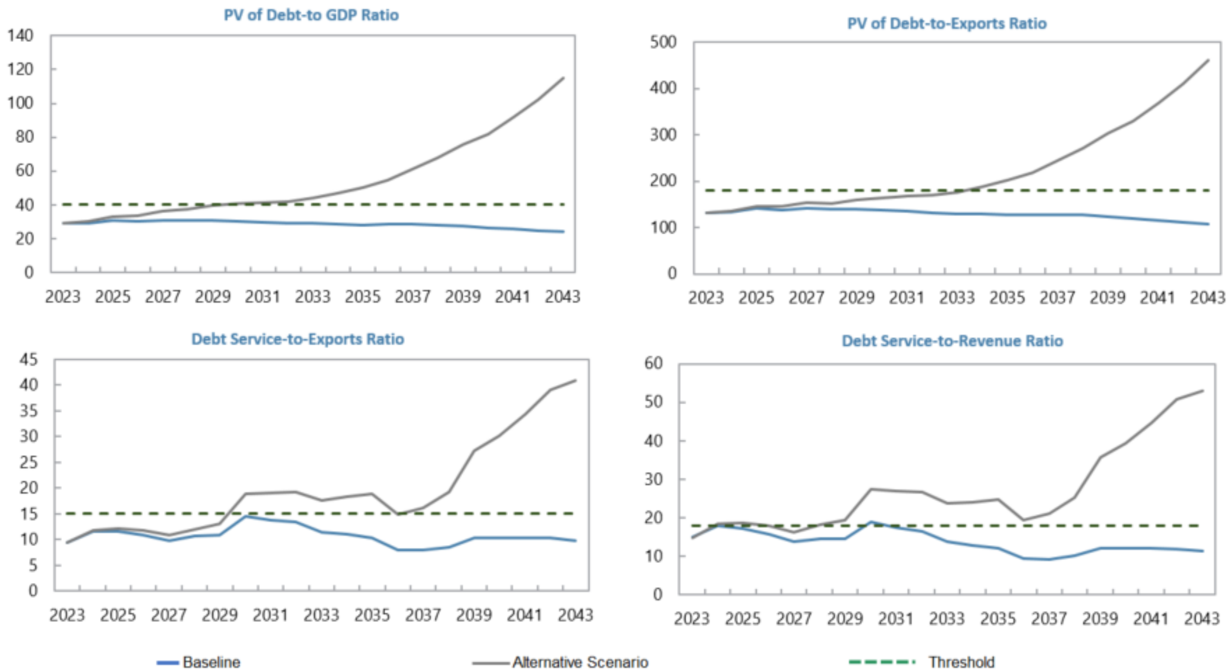
	GFN 1/	EMBI 2/
Benchmarks	14	570
Values	9	736
Breach of benchmark	No	Yes
Potential heightened liquidity needs	Moderate	

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



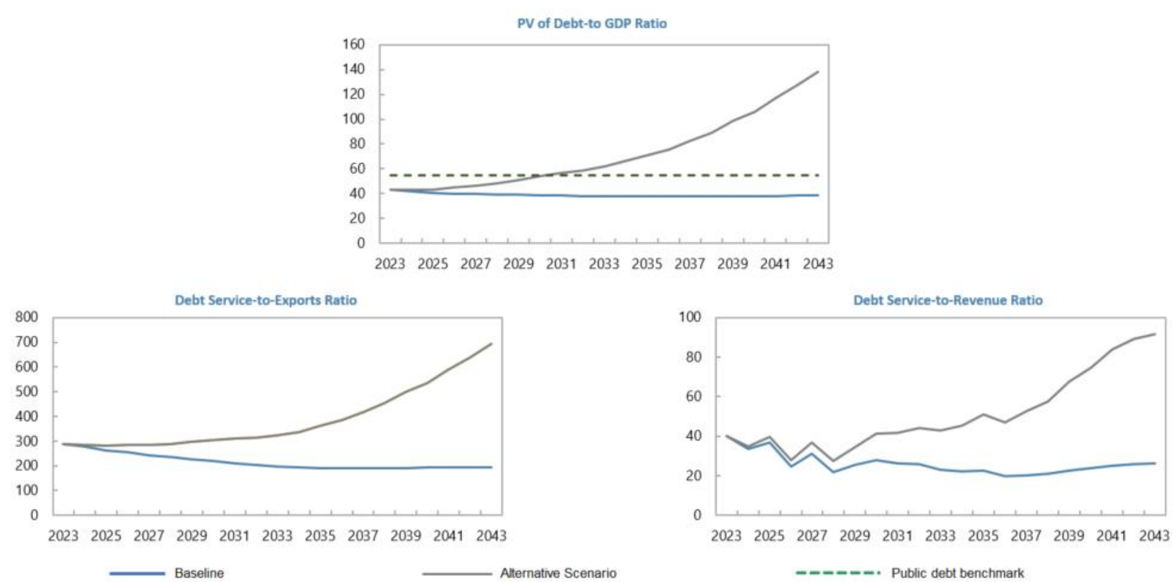
Sources: Country authorities; and staff estimates and projections.

Figure 7. Benin: Indicators of Public and Publicly Guaranteed External Debt Under a Pessimistic Climate Change Scenario, 2023–43



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

Figure 8. Benin: Indicators of Public Debt Under a Pessimistic Climate Scenario, 2023–43



Sources: Country authorities; World Bank CCDR; and IMF staff estimates and projections