EXECUTIVE BOARD MEETING

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To: Members of the Executive Board

From: The Secretary

Subject: **Benin—Third Review Under the Extended Credit Facility Arrangement and Request for Waiver of Nonobservance of Performance Criterion—Debt Sustainability Analysis**

Board Action:	Executive Directors' **consideration** (Formal)
Prepared By:	The staffs of the Fund and the International Development Association
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Questions:	Mr. Eyraud, AFR (ext. 35684) Ms. Diallo, AFR (ext. 37541) Ms. Mugnier, AFR (ext. 34242) Mr. Sy, FAD (ext. 38657)
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***The authorities have indicated that they consent to the Fund's publication of this paper.**

INTERNATIONAL MONETARY FUND

BENIN

THIRD REVIEW UNDER THE EXTENDED CREDIT FACILITY ARRANGEMENT AND REQUEST FOR WAIVER OF NONOBSERVANCE OF PERFORMANCE CRITERION—DEBT SUSTAINABILITY ANALYSIS

November 19, 2018

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

Benin: Joint Bank-Fund Debt Sustainability Analysis

Risk of external debt distress	*Moderate*
Overall risk of debt distress	*Moderate*
Granularity in the risk rating	*Substantial space to absorb shock*
Application of judgment	*No*

Benin remains at moderate risk of external debt distress. Such rating is unchanged from the previous analysis and consistent with the Staff Report of March 2018 (EBS/18/56). All the projected external debt burden indicators remain below their thresholds under the baseline, but the ratio of the present value of external debt to exports exceeds its threshold in the case of an extreme shock to exports.[1]

With regard to total public and publicly guaranteed (PPG) debt (external plus domestic), the debt-to-GDP ratio remains below its prudent benchmark in the baseline and shock scenarios. However, the size and past evolution of the domestic debt, the relatively high debt service burden, as well as the existence of contingent liabilities motivate an overall moderate risk rating and suggest that space may be more limited than indicated by the analysis of external debt indicators alone. Medium-term fiscal consolidation, sound public investment management and enhanced debt management capacity are needed to strengthen debt sustainability.

[1] Under the revised Debt Sustainability Framework for Low-Income Countries, Benin's Composite Indicator is 3.03 based on the October 2018 WEO and the 2017 CPIA, corresponding to the medium debt-carrying capacity.

PUBLIC DEBT COVERAGE

	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	

1	**The country's coverage of public debt**	The central government, central bank, government-guaranteed 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	2.9	
4	PPP	35	percent of PPP stock	2.6	
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)			10.5	

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%.

BACKGROUND ON DEBT

1. **Benin's public debt has been on a rising path since 2014.** Total public debt (external plus domestic) increased from 30.5 percent in 2014 to 54.4 percent in 2017.[2] The increase was primarily due to higher domestic debt, which tripled over three years, growing from 10.6 percent of GDP in 2014 to 32.4 percent of GDP in 2017. As for external debt, the increase was relatively small (2.2 percent of GDP) over the same period, reaching 22.0 percent of GDP in 2017.

2. **Domestic public debt has recorded a steady increase driven by the public investment scaling-up.** Starting in 2017, the authorities have undertaken an investment scaling-up plan with the aim of addressing infrastructure bottlenecks and accelerating growth. The government adopted a public investment envelope of CFAF 1,400 billion (equivalent to 26 percent of 2017 GDP) to be spent over a period of three years. The investment started off high in 2017 at CFAF 500 billion and is expected to decrease gradually to CFAF 450 billion in 2019. Over 2015-17, the authorities have increasingly relied on

[2] In the paper, debt stocks are measured at the end of the year. For instance, 2017 debt refers to the debt at the end of 2017.

the domestic and regional financial market to finance public investment projects at non-concessional terms.

3. **The debt service burden is relatively high in Benin.** The ratio of debt service to revenue stands at 66 percent in 2018[3] and is expected to decrease around 37 percent on average in the medium term and 25 percent in long run. By comparison, the debt service is projected to account for 28 percent of revenue, on average, in WAEMU countries and 21 percent in all low-income developing countries in 2018.

4. **Fiscal risks also arise from state-owned enterprises (SOEs), which entail contingent liabilities for the government.**[4] The Beninese authorities have made some progress in monitoring SOEs debt in recent years. They have collected information on all 22 SOEs and 140 autonomous agencies to assess their indebtedness. Such exercise allowed the authorities to measure the debt of state-owned companies to commercial banks. However, further work is needed to identify and analyze other SOEs liabilities and increase the debt coverage in the next DSA[5]. Few enterprises submit their budgets and financial statements to the government as required by law, making it challenging to monitor accurately SOEs debt. Also, public enterprises continue to weigh on the government budget. Over 2014-2017, they contributed – taxes, fees, and dividends – 0.3 percent of GDP to the national budget and, in return, received 1.5 percent of GDP in grants and subsidies. Ad hoc cross-debt offsetting settlements between the government and these enterprises, and their poor economic and financial performances are the main drivers of the reliance of SOEs on public resources. To address some of these issues, the authorities are in the process of adopting a new law on SOEs that aims at improving their governance and indirectly their economic and financial performance.

5. **Another risk to the public debt trajectory relates to the ongoing audit about the stock of unpaid claims held by the private sector on the government.** The authorities are in the process of preparing an audit to estimate the stock of unpaid services provided by suppliers (the payments were made outside the traditional budget cycle). The audit will be available at the beginning of 2019. If some of these claims are considered as arrears by international statistical standards, they will have to be included in the 2019 debt stock. However, the amount at stake is likely to remain limited, since the total amount of claims is 0.9 percent of GDP. To account for this risk, the public debt sustainability analysis includes a scenario with a contingent liability shock equivalent to 0.9 percent of GDP.

6. **Borrowing conditions eased substantially on the WAEMU financial market in the first half of 2018**. Due to lower demand, subscription rates for sovereign securities' auctions recovered in the second quarter of 2018. The average subscription rate rose to 104 percent in the second quarter of 2018, up from

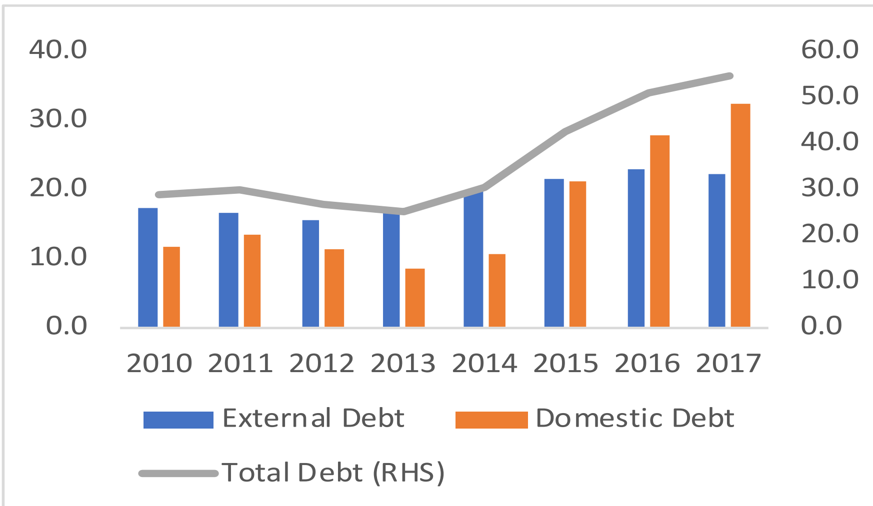
[3] An additional amount of debt repayment of CFA 170 billion, related to the debt reprofiling operation (see box 1), is included in the 2018 debt service.

[4] In the context of the Government Action Program, the authorities are contemplating several key projects of infrastructure, including some conducted through SOEs. For instance, the government has recently started discussions with the Chinese authorities to build a new international airport. At this stage, the amount, financing scheme, and calendar are unknown. When information is available, this project will be reflected in the DSA to the extent that it impacts public debt and, more generally, fiscal sustainability.

[5] Current estimate of the debt of 5 state-owned companies to commercial banks is 0.9 percent of GDP.

69 percent in both the first quarter of 2018 and second quarter of 2017. This is due to a sharp decline in sovereign demand for financing on the regional debt market, following the tapping of international markets in March 2018 by Côte d'Ivoire and Senegal. The average yield curve flattened for all sovereigns that accessed the regional financial market in the first half of 2018. Renewed liquidity pressures are not anticipated for the remainder of 2018.

Text Figure 1. Benin: Central Government Debt 2010–17
(in percent of GDP)



Sources: Authorities' data and staff calculations.

STRUCTURE OF DEBT

7. **In the Debt Sustainability Analysis (DSA) of Benin, public debt covers both the debt of the central government as well as the guarantees provided by the central government.** Due to data availability constraints, the debt of SOEs and subnational governments are not included in the baseline analysis but are captured in the contingent liability shock. The DSA of Benin classifies external and domestic debt based on the currency criterion.[6] Debt to the IMF owed by the Central Bank is included in external debt.

8. **Benin's external public debt is essentially owed to multilateral and bilateral creditors.** Since 2016, Benin's external public debt has been outweighed by domestic debt and represented at end 2017 about 40 percent of total debt. The external public debt, essentially owed to multilateral and bilateral

[6] The exception is BOAD debt in CFAF (estimated at 1.9 percent of GDP at end-2018), classified as external debt in line with relevant guidance.

creditors, is most of the time provided on concessional terms. Only 5 percent of the current external debt stock is non-concessional (as of October 2018).

9. **Domestic public debt is dominated by government securities issued in the regional financial market.** Benin's domestic public debt has increased significantly since 2014, driven mainly by the increasing reliance on the regional bond market to raise funds. About 75 percent of domestic liabilities consist of government securities issued on the regional financial market. Such debt is non-concessional and is associated with roll-over and interest rate risks.

Box 1. Debt Reprofiling Operation[1]

The authorities conducted a debt reprofiling operation in October 2018. The government borrowed from an international private bank EUR 260 million (equivalent to 3 percent of GDP) with a guarantee provided by the World Bank. The funds were used to buy back domestic syndicated loans, including a loan owed to a regional development bank. The operation was done on a voluntary basis. The government did not pay any penalty or other type of fee (no contract, except the one with the regional development bank, included early-repayment penalties[2]).

The main purpose of the operation was to lower and spread out debt service costs. The operation replaced costly and short-maturity domestic debt (with an average interest rate of 7 ½ percent and a residual maturity of 5 ½ years) with external debt at better conditions (interest rate of 3 ½ and 12-year maturity). Text Table 1 illustrates the medium-term gains generated by the reprofiling, which are significant in light of the overall size of the debt exchange. The effect on the debt service is initially beneficial over 2018-2022, and then becomes negative over 2023-2030 (when the external debt with longer maturity is repaid). Overall, there is a net positive gain over the whole period.[3]

Another advantage of the debt reprofiling is the injection of liquidity in the domestic banking sector. This liquidity will be partly used by banks to grant additional loans to the private sector. The operation's first round impact on regional reserves will also be positive.

[1]Given that the loan is denominated in Euro and that there is a fixed exchange rate between Euro/CFAF, this box does not consider the foreign exchange risk.

[2]The regional development bank waived the penalty in the context of negotiations with the Beninese government.

[3]The finding that the overall effect is positive continues to hold, even after considering the opportunity cost related to the use of the International Development Association (IDA) allocation. Indeed, $45 million out of the $60 million IDA allocation was used to guarantee the external loan but this amount could have been used otherwise to finance the budget of Benin on concessional terms.

Text Table 1. Benin: Impact of The Debt Reprofiling on Public Debt Service (in CFAF million)

		2018	2019	2020	20121	2022	2023-30[1]
Debt service of the repurchased domestic loans before reprofiling	Amortization	8,773.2	42,488.1	42,488.1	26,097.9	17,687.4	33,014.0
	Interest	2,107.0	12,172.6	9,690.7	5,244.5	3,483.5	12,709.4
	Total	10,880.2	54,660.7	52,178.8	31,342.4	21,171.0	45,723.4
Debt service of the external loan after reprofiling	Amortization	0.0	0.0	7,752.2	15,504.4	15,504.4	131,787.7
	Interest	0.0	5,952.2	5,816.9	5,546.3	5,005.2	20,426.7
	Total	0.0	5,952.2	13,569.1	21,050.8	20,509.7	152,214.4
Net impact of the debt reprofiling operation	Amortization	8,773.2	42,488.1	34,735.9	10,593.5	2,183.0	-98,773.7
	Interest	2,107.0	6,220.4	3,873.8	-301.8	-1,521.7	-7,717.3
	Total	10,880.2	48,708.6	38,609.7	10,291.6	661.3	-106,491.0
	Total (pct of GDP)	0.2	0.8	0.6	0.1	0.0	-1.2

Sources: Beninese authorities and IMF staff calculations.

1/ Data are computed on a cumulative basis.

Text Table 2. Benin: Structure of External Debt, Projected at end 2018 (in CFAF billion)

Creditors	2018
Multilateral Creditors	1136.6
IDA	514.3
FAD	242.5
Others	379.9
Bilateral Creditors	432.7
Others	266.68
China	140.2
Kowetian Fund	25.8

Sources: Beninese authorities and IMF staff calculations.

Text Table 3. Benin: Structure of Domestic Debt, Projected at end 2018 (in CFAF billion)

Creditors	2018
Other local banks	155.063
Bonds	1248.2
T-bills	160.1
Total domestic debt	1563.4

Sources: Beninese authorities and IMF staff calculations.

BACKGROUND ON MACROECONOMIC FORECASTS

10. Macroeconomic assumptions have been updated compared to the December 2017 DSA. The main changes relate to the primary balance, the non-interest current account balance and the real GDP growth for the medium term (Text Table 4).

- The 2019 real GDP growth forecast was revised up (from 6.3 to 6.5 percent) to reflect a stronger contribution of private sector investment and external demand to growth. Medium-term prospects remain strong, because of the booming cotton production, the lagged effect of the public investment scaling-up, and the recovery of Nigeria.

- On the fiscal front, the medium-term primary surplus has been revised downward due to more conservative revenue projections, motivated by the shortfall of tax revenues in the first semester of 2018 as well as more prudent assumptions related to the potential gains of revenue administration reforms in the future. The primary surplus is estimated at 0.4 percent of GDP on average in the period 2019-23 compared to 0.9 percent in the previous DSA.

- The non-interest current account deficit is expected to decline gradually in the medium to long term, thanks to better exports resulting from higher cotton production. Imports should also remain contained due to the scaling-down of public investment.

11. Risks to the baseline are to the downside. On the fiscal position, the main risks include extra spending pressures related to the 2019 and 2020 elections as well as failures to implement key reforms, in particular in the area of revenue administration and the elimination of tax expenditures. On growth, achieving the expected performance will require that the authorities rigorously implement structural reforms that aim at improving business environment and governance. A delay in the expected recovery in Nigeria would also have a negative effect on trade and growth.

Text Table 4. Benin: Macroeconomic Projections

	Dec-17			DSA 2018			
	2017	Aver.2018-23	Aver.2024-38	2018	Aver.2019-23	2028	2038
	(Percent of GDP, unless otherwise indicated)			*(Percent of GDP, unless otherwise indicated)*			
GDP growth (percent)	5.6	6.4	5.0	6.5	6.5	6.0	5.0
GDP deflator (percent)	0.0	2.0	2.0	1.0	2	2.5	2.9
Non-interest current account balance	10.7	8.1	3.4	8.8	6.6	4.4	3.6
Primary balance	3.9	-0.9	0.4	2.5	-0.4	-0.7	-0.7
Exports	18.4	20.9	28.9	21.6	25.0	29.5	30.8
Revenues and grants	18.6	19.3	19.4	18.6	19.4	19.8	20.8

Sources: Beninese authorities and IMF staff calculations.

COUNTRY CLASSIFICATION AND DETERMINATION OF SCENARIO STRESS TESTS

Country	Benin
Country Code	638

Debt Carrying Capacity	Medium

Final	Classification based on current vintage	Classification based on the previous vintage	Classification based on the two previous vintages
Medium	Medium 3.03	Medium 3.00	Medium 3.47

Note: Until the October 2018 WEO vintage is released, the previous vintage classification and corresponding score are based solely on the CPIA per the previous framework.

Applicable Thresholds

APPLICABLE	
EXTERNAL debt burden thresholds	
PV of debt in % of	
Exports	180
GDP	40
Debt service in % of	
Exports	15
Revenue	18

APPLICABLE	
TOTAL public debt benchmark	
PV of total public debt in percent of GDP	55

Cut-off Values of the CI

New framework			
	Cut-off values		
Weak	CI ≤	2.69	
Medium	2.69	< CI ≤	3.05
Strong	CI >	3.05	

Calculation of the CI Index

Components	Coefficients (A)	10-year average values (B)	CI Score components (A*B) = (C)	Contribution of components
CPIA	0.385	3.473	1.34	44%
Real growth rate (in percent)	2.719	5.760	0.16	5%
Import coverage of reserves (in percent)	4.052	40.207	1.63	54%
Import coverage of reserves^2 (in percent)	-3.990	16.166	-0.65	-21%
Remittances (in percent)	2.022	3.343	0.07	2%
World economic growth (in percent)	13.520	3.583	0.48	16%
CI Score			3.03	100%
CI rating			Medium	

REALISM TOOLS

12. The growth projections for 2018 and 2019 are more optimistic than the growth path predicted by the growth and fiscal adjustment tool (Figure 4). Preliminary data for the first half of the year confirm the 2018 growth projection. More generally, the deviation between baselines projections and the growth path with LIC's typical multiplier of 0.4, can be explained by several factors:

- The authorities are implementing an ambitious investment scaling plan, which is expected to peak in in 2017-18. Given the traditional long lags of investment multipliers, we expect the positive growth effects to persist at least until 2019.[7]
- The revitalizing of the cotton production (a record high growth of 67 percent and 33 percent of cotton production, in 2016 and 2017 respectively) will be transmitted to the secondary sector in 2018 through the ginned cotton activity, as well as higher export revenues. The cotton activity should remain dynamic in 2018, impacting exports revenue and growth in 2019.
- A number of large infrastructure projects of the PAG are expected to start in 2019.
- The Nigeria's economy is projected to accelerate in 2018 and 2019.

13. The fiscal adjustment path is assessed to be realistic despite being in the upper end of the historical distribution. Fiscal consolidation is expected to amount to about 4 percent between 2017 and

[7] See computation of the size and persistence of fiscal multipliers in Sub-Sahara Africa *Regional Economic Outlook* October 2017.

2020. This is high by historical standards (Figure 4). However, the adjustment will be mostly achieved through a scaling down of public investment, which increased by about 3 percent of GDP between 2016 and 2017-18 and will revert to its 2016 level in subsequent years.

RISK RATING AND VULNERABILITIES: EXTERNAL DEBT SUSTAINABILITY RESULTS

14. The external debt burden indicators remain below the policy-dependent thresholds in the baseline, but the ratio of the present value of external debt to exports exceeds its threshold in the case of an extreme shock to exports. In the baseline, all debt indicators remain below their relevant policy-dependent thresholds. The PV of total PPG external debt is expected to stabilize at about 21 percent of GDP on average over 2019–23, achieving 13.5 percent of GDP in 2038. Thus, the ratio would remain below the corresponding threshold of 40 percent of GDP throughout the projection period. Nonetheless, one indicator—the ratio of the PV of external debt to exports—exceeds its threshold in the case of an extreme shock to exports, while the debt-to-GDP ratio and all debt service indicators remain below thresholds. This breach is what motivates the assessment of moderate risk for external debt.

RISK RATING AND VULNERABILITIES: PUBLIC DEBT SUSTAINABILITY RESULTS

15. Total PPG debt (external plus domestic) remains below its respective benchmark in all scenarios. Total debt does not show any breach in baseline and shock scenarios. However, the past evolution and size of domestic debt, the relatively high ratio of debt service to revenue, as well as the existence of contingent liabilities of SOEs and the moderate risk of external debt distress motivate the assessment of a moderate overall risk of debt distress.

CONCLUSION

16. The updated DSA confirms that Benin stands at moderate risk of external and overall debt distress. The ratings are unchanged relative to the Staff Report of March 2018 (EBS/18/56). Medium-term fiscal consolidation and improved debt management are needed to maintain the debt sustainability.

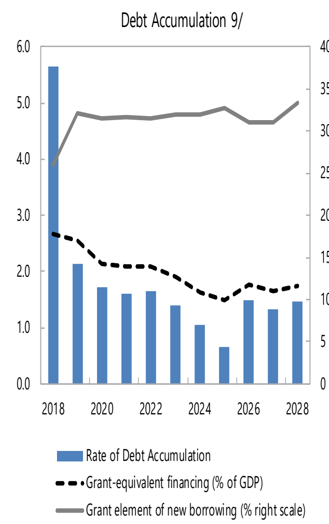
17. The authorities concur broadly with staff's assessment. Consistent with the main findings of the DSA, the authorities remain committed to strengthening debt sustainability by adhering to medium-term fiscal consolidation, conducting sound public investment management, and enhancing debt management capacity.

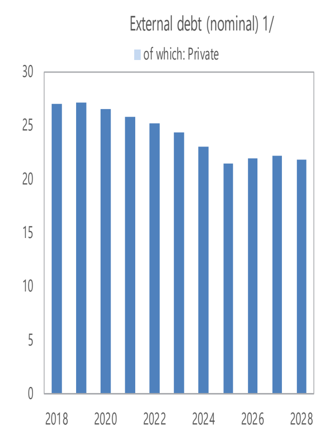
Table 1. Benin: External Debt Sustainability Framework, Baseline Scenario, 2015–38

(In percent of GDP, unless otherwise indicated)

	Actual			Projections								Average 8/	
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2028	2038	Historical	Projections
External debt (nominal) 1/	21.3	22.5	22.0	27.0	27.1	26.5	25.8	25.2	24.3	21.8	17.3	18.1	24.2
of which: public and publicly guaranteed (PPG)	21.3	22.5	22.0	27.0	27.1	26.5	25.8	25.2	24.3	21.8	17.3	18.1	24.2
Change in external debt	1.5	1.2	-0.5	5.0	0.1	-0.5	-0.7	-0.6	-0.9	-0.3	-0.8		
Identified net debt-creating flows	12.0	7.4	6.5	5.7	4.9	4.2	3.4	2.1	1.9	0.9	0.9	5.8	2.6
Non-interest current account deficit	9.7	9.2	9.6	8.8	8.1	7.6	6.8	5.4	5.1	4.4	3.6	8.4	6.0
Deficit in balance of goods and services	12.1	11.9	12.4	11.3	10.3	9.6	8.6	7.5	7.2	6.7	6.1	12.3	9.2
Exports	17.6	16.7	19.6	21.6	23.6	24.3	25.1	25.8	26.4	29.5	30.8		
Imports	29.7	28.7	32.0	32.9	33.9	34.0	33.7	33.3	33.6	36.2	36.9		
Net current transfers (negative = inflow)	-2.1	-2.5	-2.6	-2.6	-2.3	-2.4	-2.2	-2.4	-2.4	-2.8	-1.8	-3.8	-2.9
of which: official	-1.6	-1.9	-1.9	-1.8	-1.5	-1.3	-1.2	-1.4	-1.4	-1.6	-1.4		
Other current account flows (negative = net inflow)	-0.3	-0.3	-0.2	0.1	0.1	0.3	0.4	0.4	0.4	0.5	-0.8	-0.1	-0.3
Net FDI (negative = inflow)	-1.4	-1.3	-1.7	-1.9	-1.9	-1.9	-1.9	-1.9	-1.9	-2.3	-2.3	-2.2	-2.2
Endogenous debt dynamics 2/	3.7	-0.5	-1.3	-1.2	-1.2	-1.5	-1.5	-1.5	-1.4	-1.3	-0.4		
Contribution from nominal interest rate	0.3	0.2	0.3	0.1	0.4	0.2	0.1	0.1	0.1	0.0	0.4		
Contribution from real GDP growth	-0.5	-0.8	-1.2	-1.3	-1.6	-1.6	-1.6	-1.5	-1.5	-1.2	-0.8		
Contribution from price and exchange rate changes	3.9	0.1	-0.5	...	...	...	...	...	...	...	...		
Residual 3/	-10.6	-6.2	-7.0	-0.7	-4.9	-4.8	-4.2	-2.7	-2.7	-1.2	-1.6	-4.7	-2.6
of which: exceptional financing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Sustainability indicators													
PV of PPG external debt-to-GDP ratio	...	...	17.7	20.7	21.3	21.2	21.1	20.9	20.6	18.4	13.5		
PV of PPG external debt-to-exports ratio	...	...	90.2	95.7	90.3	87.2	83.9	81.2	78.0	62.3	43.7		
PPG debt service-to-exports ratio	5.4	4.5	4.8	3.4	5.3	5.1	4.7	4.4	4.3	4.8	3.8		
PPG debt service-to-revenue ratio	5.7	5.1	5.4	4.1	7.1	6.8	6.4	6.2	6.3	7.5	5.7		
Gross external financing need (Billion of U.S. dollars)	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.8	1.2		
Key macroeconomic assumptions													
Real GDP growth (in percent)	2.1	4.0	5.8	6.5	6.5	6.5	6.5	6.5	6.5	6.0	5.0	4.3	6.3
GDP deflator in US dollar terms (change in percent)	-16.4	-0.6	2.1	5.9	0.5	1.8	1.8	1.8	1.9	2.5	2.9	0.5	2.4
Effective interest rate (percent) 4/	1.4	1.1	1.6	0.4	1.6	0.7	0.3	0.3	0.5	-0.2	2.5	1.5	1.1
Growth of exports of G&S (US dollar terms, in percent)	-5.0	-1.9	26.4	24.4	16.9	11.8	11.8	11.5	10.9	10.2	16.0	8.1	13.0
Growth of imports of G&S (US dollar terms, in percent)	-18.2	-0.3	20.5	16.0	10.3	8.7	7.6	7.1	9.5	7.5	13.6	5.9	10.2
Grant element of new public sector borrowing (in percent)	...	...	...	25.9	32.1	31.4	31.6	31.5	31.9	33.4	33.6	...	31.3
Government revenues (excluding grants, in percent of GDP)	16.7	14.7	17.5	17.7	17.7	18.1	18.2	18.2	18.2	19.1	20.3	16.9	18.3
Aid flows (in Billion of US dollars) 5/	0.0	0.1	0.1	0.2	0.3	0.2	0.3	0.3	0.3	0.4	0.4		
Grant-equivalent financing (in percent of GDP) 6/	...	...	...	2.7	2.6	2.1	2.1	2.1	1.9	1.7	0.9	...	2.0
Grant-equivalent financing (in percent of external financing) 6/	...	...	...	35.1	52.9	54.0	55.6	55.6	56.7	47.5	50.3	...	51.0
Nominal GDP (Billion of US dollars)	8	9	9	10	11	12	13	14	15	23	51		
Nominal dollar GDP growth	-14.7	3.4	8.0	12.9	7.0	8.5	8.5	8.5	8.5	8.6	8.0	4.9	8.8
Memorandum items:													
PV of external debt 7/	...	...	17.7	20.7	21.3	21.2	21.1	20.9	20.6	18.4	13.5		
In percent of exports	...	...	90.2	95.7	90.3	87.2	83.9	81.2	78.0	62.3	43.7		
Total external debt service-to-exports ratio	5.4	4.5	4.8	3.4	5.3	5.1	4.7	4.4	4.3	4.8	3.8		
PV of PPG external debt (in Billion of US dollars)			1.6	2.2	2.4	2.6	2.8	3.0	3.2	4.3	6.8		
(PVt-PVt-1)/GDPt-1 (in percent)				5.6	2.1	1.7	1.6	1.6	1.4	1.5	0.4		
Non-interest current account deficit that stabilizes debt ratio	8.2	8.0	10.1	3.8	8.0	8.1	7.5	6.1	6.0	4.7	4.3		

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 - 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.

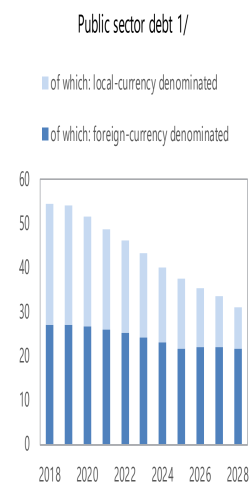
8/ Historical averages are generally derived over the past 10 years, subject to data availability, whereas projections averages are over the first year of projection and the next 10 years.

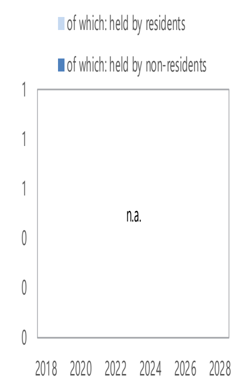
9/The peak in 2018 partly reflects the reprofiling operation.

Table 2. Benin: Public Sector Debt Sustainability Framework, Baseline Scenario, 2015–38
(In percent of GDP, unless otherwise indicated)

	Actual			Projections								Average 6/	
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2028	2038	Historical	Projections
Public sector debt 1/	42.4	49.7	54.4	54.6	54.0	51.6	48.9	46.0	43.2	30.9	24.0	30.8	43.3
of which: external debt	21.3	22.5	22.0	27.0	27.1	26.5	25.8	25.2	24.3	21.8	17.3	18.1	24.2
Change in public sector debt	17.0	7.3	4.8	0.2	-0.6	-2.4	-2.8	-2.8	-2.8	-2.7	-0.8		
Identified debt-creating flows	9.7	5.1	0.7	1.1	-1.9	-2.4	-2.6	-2.7	-2.7	-2.5	-2.0	1.7	-2.1
Primary deficit	6.9	4.7	3.8	2.5	0.3	-0.3	-0.5	-0.6	-0.7	-0.7	-0.7	2.3	-0.3
Revenue and grants	17.3	15.3	18.6	18.6	19.2	19.4	19.5	19.5	19.4	19.8	20.8	18.4	19.4
of which: grants	0.6	0.7	1.1	0.9	1.5	1.3	1.3	1.3	1.2	0.8	0.4		
Primary (noninterest) expenditure	24.2	20.0	22.4	21.1	19.5	19.0	19.0	18.8	18.7	19.1	20.0	20.6	19.2
Automatic debt dynamics	2.8	0.4	-3.1	-1.4	-2.2	-2.1	-2.1	-2.1	-2.0	-1.9	-1.3		
Contribution from interest rate/growth differential	3.6	-1.0	-2.4	-4.0	-3.0	-3.6	-3.6	-3.5	-3.4	-2.9	-1.9		
of which: contribution from average real interest rate	4.1	0.6	0.4	-0.6	0.3	-0.3	-0.5	-0.6	-0.6	-1.0	-0.8		
of which: contribution from real GDP growth	-0.5	-1.6	-2.7	-3.3	-3.3	-3.3	-3.2	-3.0	-2.8	-1.9	-1.2		
Contribution from real exchange rate depreciation	-0.8	1.4	-0.8	...	...	...	...	...	...	...	...		
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	7.3	2.2	4.1	1.7	2.1	1.5	1.4	1.4	1.3	1.0	1.9	1.8	1.3
Sustainability indicators													
PV of public debt-to-GDP ratio 2/	...	...	49.3	48.7	48.1	46.1	43.9	41.6	39.3	27.4	20.1		
PV of public debt-to-revenue and grants ratio	...	...	264.9	261.8	250.1	238.3	225.5	213.6	202.8	138.2	96.6		
Debt service-to-revenue and grants ratio 3/	14.4	18.2	37.4	66.4	48.2	42.3	31.4	37.0	26.7	25.9	24.3		
Gross financing need 4/	9.4	7.5	10.7	14.8	9.6	7.9	5.6	6.6	4.5	4.4	4.3		
Key macroeconomic and fiscal assumptions													
Real GDP growth (in percent)	2.1	4.0	5.8	6.5	6.5	6.5	6.5	6.5	6.5	6.0	5.0	4.3	6.3
Average nominal interest rate on external debt (in percent)	1.5	1.2	1.7	0.4	1.7	0.7	0.3	0.3	0.5	-0.2	2.4	1.5	1.0
Average real interest rate on domestic debt (in percent)	7.5	5.3	6.4	5.5	6.0	6.0	5.9	5.8	5.6	5.4	-0.7	2.2	5.6
Real exchange rate depreciation (in percent, + indicates depreciation)	-3.3	7.0	-3.8	...	...	...	...	...	...	...	...	4.8	...
Inflation rate (GDP deflator, in percent)	0.1	-0.3	0.0	0.8	1.8	1.8	1.8	1.8	1.9	2.5	2.9	2.2	1.9
Growth of real primary spending (deflated by GDP deflator, in percent)	29.5	-14.0	18.4	0.3	-1.5	4.0	6.2	5.7	5.6	6.5	5.5	6.2	4.8
Primary deficit that stabilizes the debt-to-GDP ratio 5/	-10.1	-2.6	-1.0	2.3	0.9	2.1	2.3	2.2	2.1	2.0	0.1	-4.6	1.9
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





Sources: Country authorities; and staff estimates and projections.

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

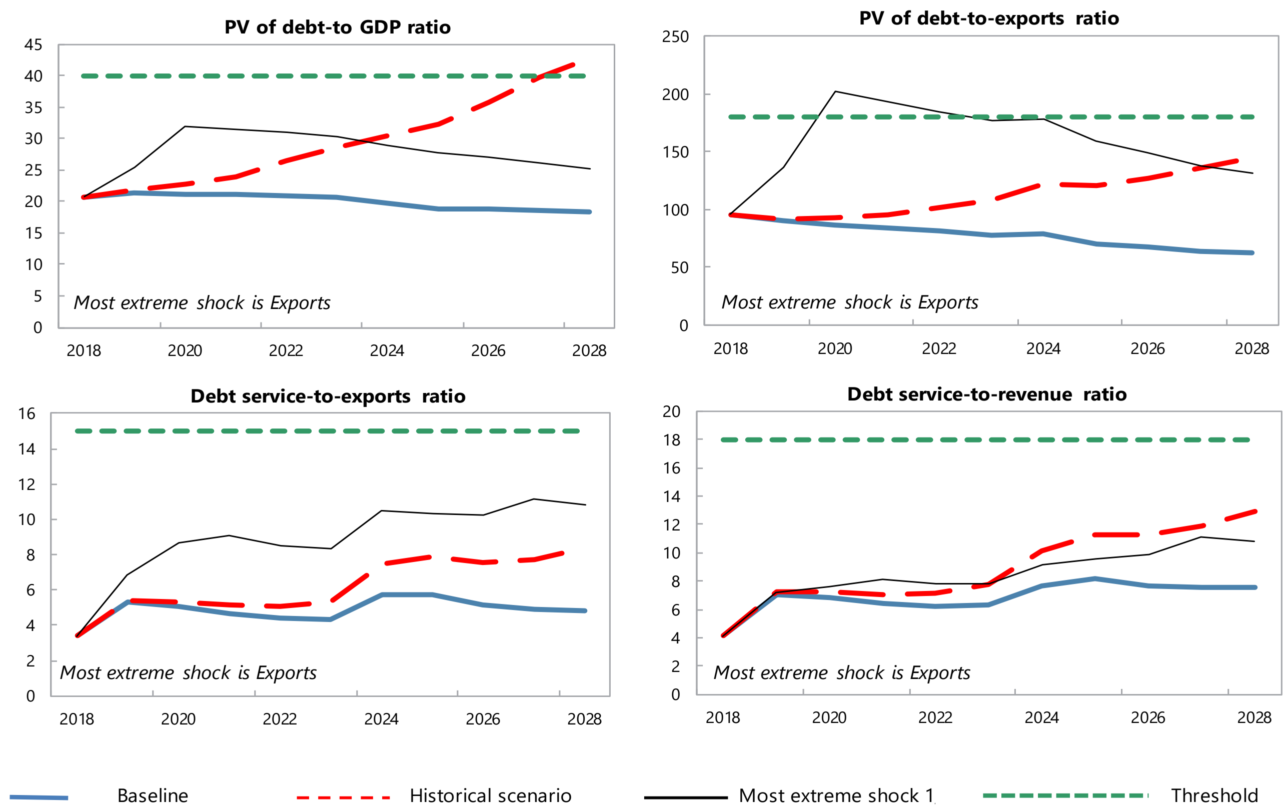
3/ Debt service is defined as the sum of interest and amortization of medium and long-term, and short-term debt.

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 and Publicly Guaranteed External Debt Under Alternative Scenarios, 2018–28[1]



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	n.a.	n.a.

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

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	2.1%	2.1%
USD Discount rate	5.0%	5.0%
Avg. maturity (incl. grace period)	24	24
Avg. grace period	6	6

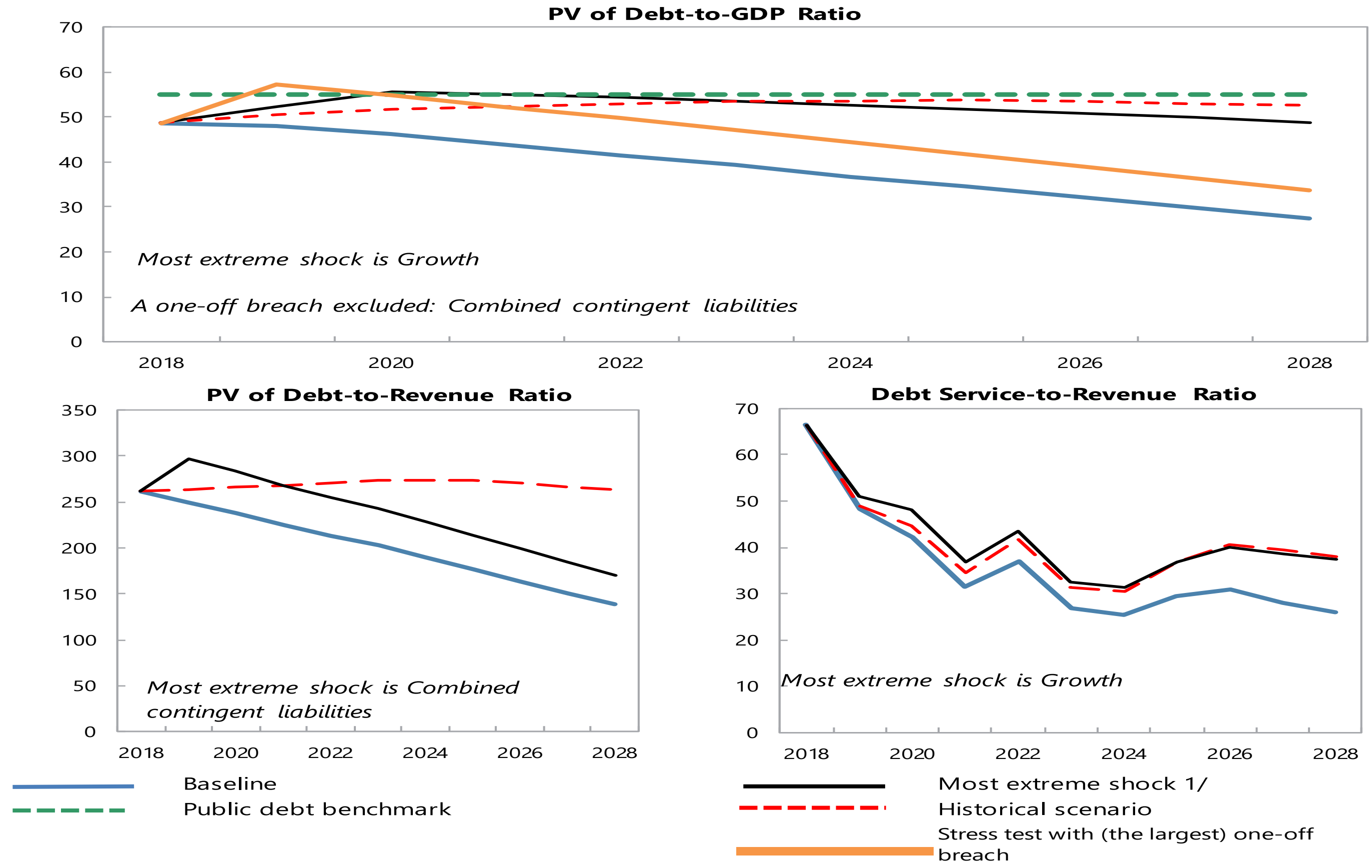
* Note: All the additional financing needs generated by the shocks under the stress tests are assumed to be covered by PPG external MLT debt in the external DSA. Default terms of marginal debt are based on baseline 10-year projections.

Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in or before 2028. Stress tests with one-off breaches are also presented (if any), while these one-off breaches are deemed away for mechanical signals. When a stress test with a one-off breach happens to be the most exterme shock even after disregarding the one-off breach, only that stress test (with a one-off breach) would be presented.

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

Figure 2. Benin: Indicators of Public Debt Under Alternative Scenarios, 2018–28



Borrowing Assumptions for Stress Tests*	Default	User defined
Shares of marginal debt		
External PPG medium and long-term	46%	46%
Domestic medium and long-term	48%	48%
Domestic short-term	6%	6%
Terms of marginal debt		
External MLT debt		
Avg. nominal interest rate on new borrowing in USD	2.1%	2.1%
Avg. maturity (incl. grace period)	24	24
Avg. grace period	6	6
Domestic MLT debt		
Avg. real interest rate on new borrowing	4.0%	4.0%
Avg. maturity (incl. grace period)	9	9
Avg. grace period	5	5
Domestic short-term debt		
Avg. real interest rate	4.0%	4.0%

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

Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in or before 2028. 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, 2018–28 (In percent)

	Projections 1/										
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
PV of debt-to GDP ratio											
Baseline	21	21	21	21	21	21	20	19	19	19	18
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2018-2028 2/	21	22	23	24	26	29	30	32	36	40	**43**
B. Bound Tests											
B1. Real GDP growth	21	23	24	24	24	23	22	21	21	21	21
B2. Primary balance	21	23	24	24	24	24	23	22	22	22	22
B3. Exports	21	25	32	31	31	30	29	28	27	26	25
B4. Other flows 3/	21	23	24	24	24	23	22	21	21	21	20
B5. One-time 30 percent nominal depreciation	21	27	22	22	22	22	21	20	20	20	20
B6. Combination of B1-B5	21	27	27	26	26	26	24	23	23	23	22
C. Tailored Tests											
C1. Combined contingent liabilities	21	25	25	25	24	24	23	22	22	22	22
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	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Threshold	40	40	40	40	40	40	40	40	40	40	40
PV of debt-to-exports ratio											
Baseline	96	90	87	84	81	78	79	71	67	64	62
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2018-2028 2/	96	92	93	96	102	109	122	121	127	136	145
B. Bound Tests											
B1. Real GDP growth	96	90	87	84	81	78	79	71	67	64	62
B2. Primary balance	96	96	100	96	93	89	91	82	78	75	73
B3. Exports	96	137	**203**	**193**	**185**	176	178	160	149	138	132
B4. Other flows 3/	96	97	99	95	92	88	89	80	75	71	68
B5. One-time 30 percent nominal depreciation	96	90	73	70	69	66	67	60	57	55	55
B6. Combination of B1-B5	96	123	95	120	116	111	113	101	95	89	87
C. Tailored Tests											
C1. Combined contingent liabilities	96	105	102	98	94	91	92	83	80	76	75
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	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Threshold	180	180	180	180	180	180	180	180	180	180	180
Debt service-to-exports ratio											
Baseline	3	5	5	5	4	4	6	6	5	5	5
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2018-2028 2/	3	5	5	5	5	5	7	8	8	8	8
B. Bound Tests											
B1. Real GDP growth	3	5	5	5	4	4	6	6	5	5	5
B2. Primary balance	3	5	5	5	5	5	6	6	6	6	6
B3. Exports	3	7	9	9	8	8	10	10	10	11	11
B4. Other flows 3/	3	5	5	5	5	5	6	6	6	6	5
B5. One-time 30 percent nominal depreciation	3	5	5	4	4	4	5	5	5	4	4
B6. Combination of B1-B5	3	6	7	6	6	6	8	8	8	7	7
C. Tailored Tests											
C1. Combined contingent liabilities	3	5	5	5	5	5	6	6	5	5	5
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	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Threshold	15	15	15	15	15	15	15	15	15	15	15
Debt service-to-revenue ratio											
Baseline	4.1	7.1	6.8	6.4	6.2	6.3	7.7	8.1	7.7	7.6	7.5
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2018-2028 2/	4	7	7	7	7	8	10	11	11	12	13
B. Bound Tests											
B1. Real GDP growth	4	8	8	7	7	7	9	9	9	9	9
B2. Primary balance	4	7	7	7	7	7	8	9	8	9	9
B3. Exports	4	7	8	8	8	8	9	10	10	11	11
B4. Other flows 3/	4	7	7	7	7	7	8	8	8	9	8
B5. One-time 30 percent nominal depreciation	4	9	9	7	7	7	9	10	9	8	8
B6. Combination of B1-B5	4	8	8	8	7	7	9	10	10	9	9
C. Tailored Tests											
C1. Combined contingent liabilities	4	7	7	7	7	7	8	9	8	8	8
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	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Threshold	18	18	18	18	18	18	18	18	18	18	18

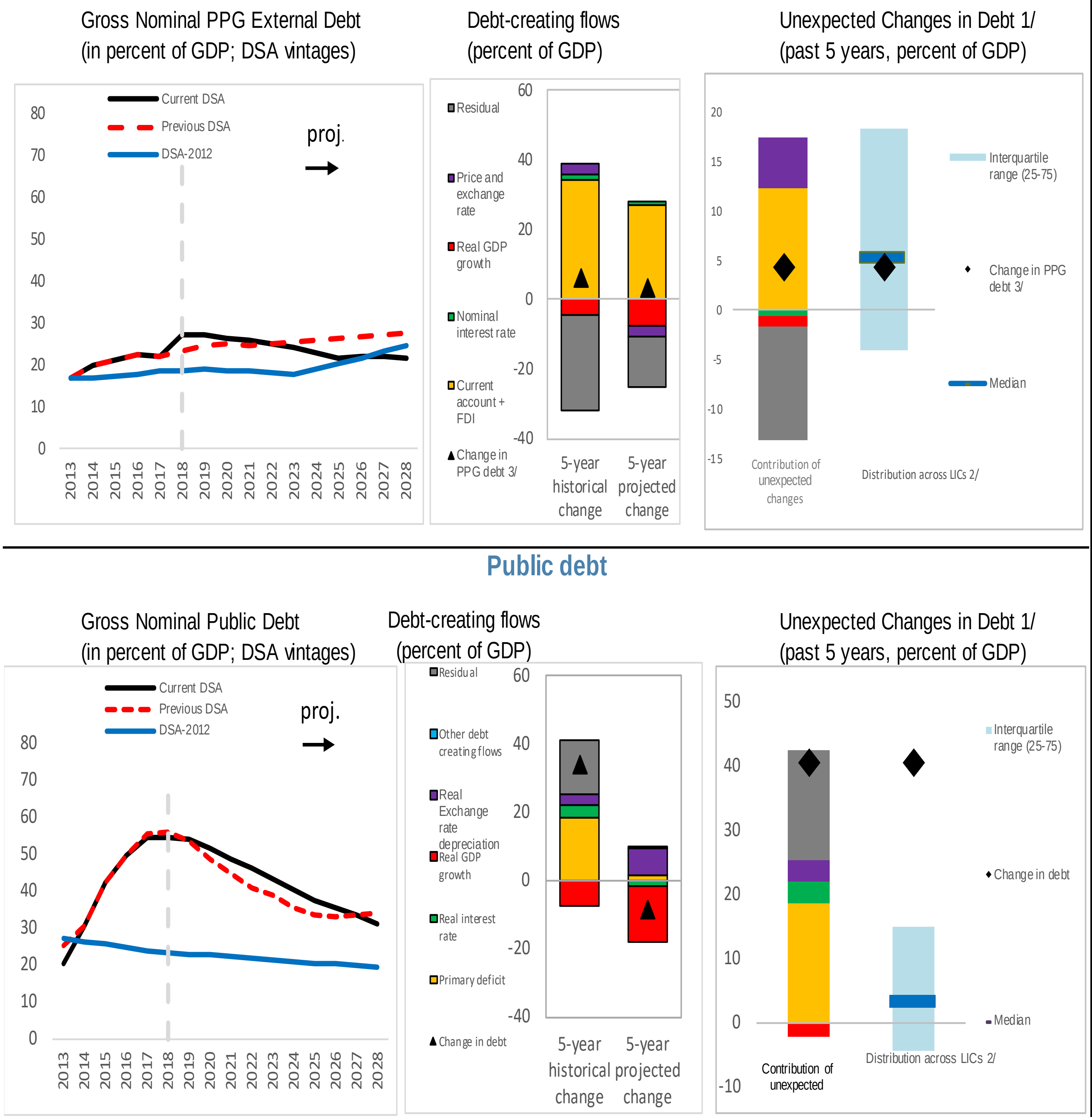
Sources: Country authorities; and staff estimates and projections.
1/ A bold value indicates a breach of the threshold.
2/ Variables include real GDP growth, GDP deflator (in U.S. dollar terms), non-interest current account in percent of GDP, and non-debt creating flows.
3/ Includes official and private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

Table 4. Benin: Sensitivity Analysis for Key Indicators of Public Debt, 2018–28

	Projections 1/										
	2018	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
PV of Debt-to-GDP Ratio											
Baseline	49	48	46	44	42	39	37	35	32	30	27
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2018-2028 2/	49	51	52	53	53	53	54	54	53	53	53
B. Bound Tests											
B1. Real GDP growth	49	52	**56**	**55**	54	54	53	52	51	50	49
B2. Primary balance	49	52	54	51	49	46	44	41	39	36	33
B3. Exports	49	52	**56**	53	51	48	45	43	40	37	33
B4. Other flows 3/	49	50	49	47	44	42	39	37	34	32	29
B5. One-time 30 percent nominal depreciation	49	51	48	44	41	37	34	31	27	24	21
B6. Combination of B1-B5	49	51	51	47	45	42	40	38	36	34	31
C. Tailored Tests											
C1. Combined contingent liabilities	49	**57**	55	52	50	47	44	42	39	36	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	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	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Public debt benchmark	**55**	**55**	**55**	**55**	**55**	**55**	**55**	**55**	**55**	**55**	**55**
PV of Debt-to-Revenue Ratio											
Baseline	262	250	238	225	214	203	189	177	164	151	138
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2018-2028 2/	262	263	266	269	271	274	273	273	270	266	264
B. Bound Tests											
B1. Real GDP growth	262	270	284	280	276	274	268	264	257	251	244
B2. Primary balance	262	269	279	264	251	240	225	211	196	182	167
B3. Exports	262	269	289	274	260	248	232	217	202	185	169
B4. Other flows 3/	262	258	253	240	227	216	202	189	175	161	147
B5. One-time 30 percent nominal depreciation	262	268	247	228	210	194	174	157	138	121	104
B6. Combination of B1-B5	262	263	262	241	229	218	205	193	181	170	157
C. Tailored Tests											
C1. Combined contingent liabilities	262	297	283	269	255	243	228	214	199	184	170
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	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Debt Service-to-Revenue Ratio											
Baseline	66	48	42	31	37	27	25	29	31	28	26
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2018-2028 2/	66	49	45	35	42	31	31	37	41	39	38
B. Bound Tests											
B1. Real GDP growth	66	51	48	37	44	32	31	37	40	38	38
B2. Primary balance	66	48	44	35	39	29	27	33	37	34	32
B3. Exports	66	48	43	33	38	28	26	30	33	31	29
B4. Other flows 3/	66	48	42	32	37	27	26	30	32	29	27
B5. One-time 30 percent nominal depreciation	66	46	41	31	36	26	26	29	30	27	25
B6. Combination of B1-B5	66	48	43	34	38	28	27	31	35	34	31
C. Tailored Tests											
C1. Combined contingent liabilities	66	48	47	34	39	29	27	35	37	34	31
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	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Sources: Country authorities; and staff estimates and projections.
1/ A bold value indicates a breach of the threshold.
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



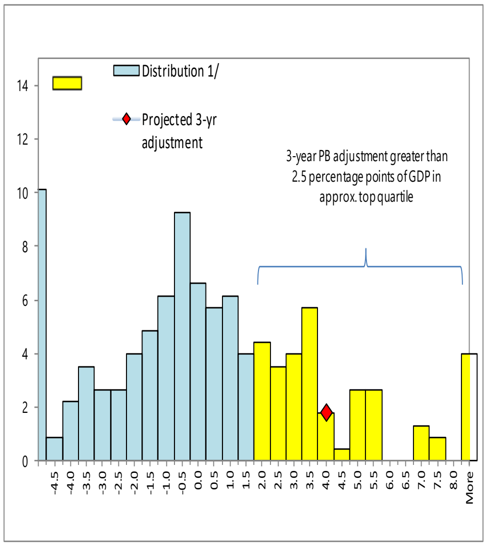
1/ Difference between anticipated and actual contributions on debt ratios.

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.

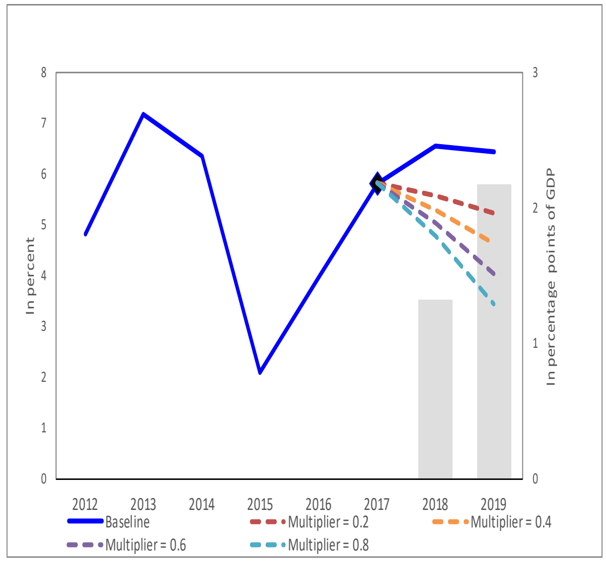
Figure 4. Benin: Realism Tools

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



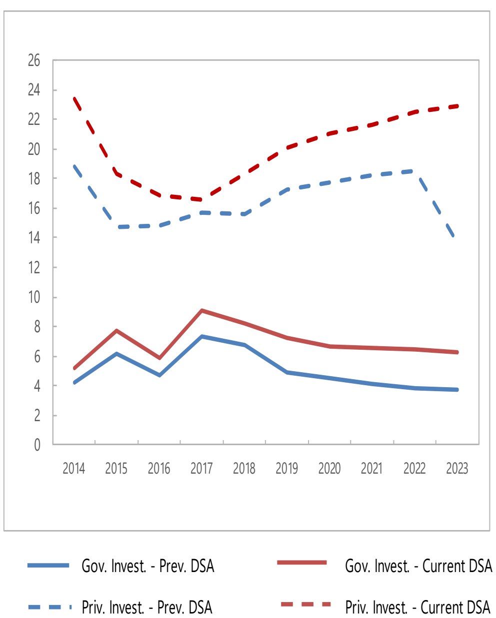
1/ Data cover Fund-supported programs for LICs (excluding emergency financing) approved since 1990. The size of 3-year adjustment from program inception is found on the horizontal axis; the percent of sample is found on the vertical axis.

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
(% of GDP)



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

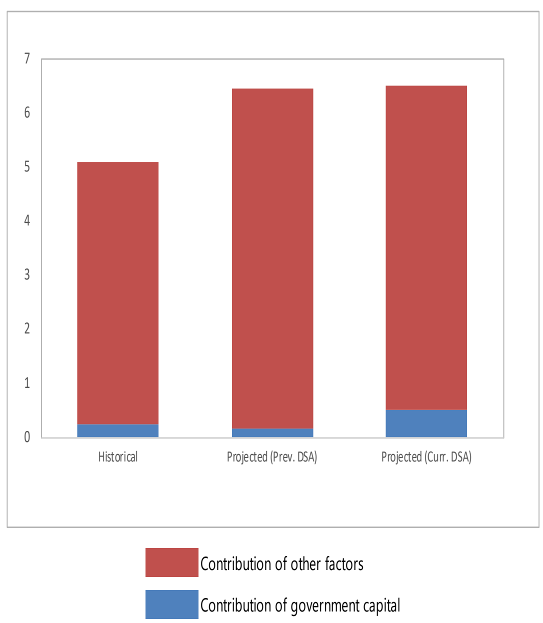


Figure 5. Benin: Qualification of the Moderate Category, 2018–28 1/

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.