INTERNATIONAL MONETARY FUND

BENIN

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FIFTH REVIEW UNDER THE EXTENDED CREDIT FACILITY ARRANGEMENT, REQUEST FOR EXTENSION, AND REQUEST FOR MODIFICATION OF PERFORMANCE CRITERIA —DEBT SUSTAINABILITY ANALYSIS

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Benin: Joint Bank-Fund Debt Sustainability Analysis

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

*Benin remains at moderate risk of **external debt** distress. The rating is unchanged from the previous May 2019 DSA. All the projected external debt burden indicators remain below their thresholds under the baseline, but the ratio of the present value (PV) of external debt to exports exceeds its threshold in the case of an extreme shock to exports.*[1]

*With regard to **public and publicly guaranteed (PPG) debt (external plus domestic)**, the overall risk of debt distress remains also moderate because of the external debt rating. Nonetheless, the PV of public debt-to-GDP ratio remains below its prudent benchmark in the baseline and shock scenarios.*

[1] Under the revised Debt Sustainability Framework for Low-Income Countries, Benin's Composite Indicator is 2.962 based on the October 2019 WEO and the CPIA score released in 2019, corresponding to the medium debt-carrying capacity.

PUBLIC DEBT COVERAGE

Text Table 1. Benin: Subsectors of the Public Sector

	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	

Text Table 2. Benin: Magnitude of the Contingent Liability Tailored Stress Test

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	0.6	
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)		8.2	

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%.

1. 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.[2] The DSA classifies external and domestic debt based on the currency criterion, given data constraints that prevent the use of the residency criterion. Debt to the IMF owed by the Central Bank is included in external debt.

2. The authorities completed an audit about the stock of unpaid claims held by the private sector on the government in January 2019. The authorities found a stock of arrears to suppliers of 0.2 percent GDP incurred before 2016. This amount of arrears was added to the 2019 debt stock. The current fiscal projections also assume a gradual clearance of the arrears over 2020-22 at a pace of 0.1 percent of GDP per year.

3. The debt of state-owned enterprises (SOEs) and subnational governments are not included in the baseline analysis but are captured in the contingent liability shock. Because SOEs can entail contingent liabilities for the government and create fiscal risks, it is important to have an exhaustive overview of their financial situation.[3] The authorities have made progress in the area of monitoring in past

[2] Government domestic arrears are also included see below.

[3] 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 started discussions with the Chinese authorities to build a new international airport. At this stage, the amount, financing scheme, and

(continued)

years, by collecting financial information on SOEs. In early 2019, they produced an estimate of 0.6 percent of GDP for the non-guaranteed commercial debt of 13 state-owned companies at end-2018.[4] For end-2019, SOE non-guaranteed commercial debt is projected at 0.5 percent of GDP. Also, to address contingent liability risks, 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. In the context of the current DSA, the following approach is taken:

- All *guaranteed* SOE debt is included in the debt stock in the baseline.
- *Non-guaranteed* SOE debt is captured as contingent liability shock. This shock is set at 0.6 percent of GDP (to reflect the information collected on SOE debt).
- Further work is needed to properly and fully incorporate SOEs in the DSA baseline, including consolidating the general government fiscal accounts with the financial statements of the SOEs (both on the revenue and expenditure sides). The authorities see this consolidation as a prerequisite before incorporating SOE debt into total debt (in the baseline) and are working with AFRITAC WEST to establish a work program.

BACKGROUND ON DEBT

4. The recent rebasing of national accounts has significantly improved the fiscal and debt ratios. In July 2019, the authorities published revised national accounts, with the past GDP trajectory being revised upward by 37 percent. Such exercise has led to a sharp downward revision of all fiscal ratios, in particular the public debt ratio which was revised down from 54.7 percent of GDP to 41.4 percent in 2019. However, the ratios of the DSA that are expressed in terms of taxes and exports remained unchanged or have only marginally improved. Indeed, taxes are unaffected by the rebasing, while the upward revision of the GDP was mostly based on an increase in private consumption, not exports.

5. Benin's public debt has increased rapidly since 2014. Total public debt (external plus domestic) increased from 22.3 percent in 2014 to 41.5 percent in 2018.[5] The increase was primarily due to higher domestic debt, which tripled over three years, growing from 7.8 percent of GDP in 2014 to 23.7 percent of GDP in 2017. Such a rise in the domestic debt was essentially driven by the scaling-up of public investment. Over 2015-17, the authorities have increasingly relied on the domestic and regional financial market to finance public investment projects at non-concessional terms. With the debt reprofiling of October 2018, the stock of domestic debt declined, and is estimated at 22.2 percent of GDP in 2018. As for external debt, the increase was relatively small over the 2014-18 period (4.8 percent of GDP), reaching 19.3 percent of GDP in 2018.

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.

[4] Guarantees on SOE debt provided by the central government are already included in public debt.

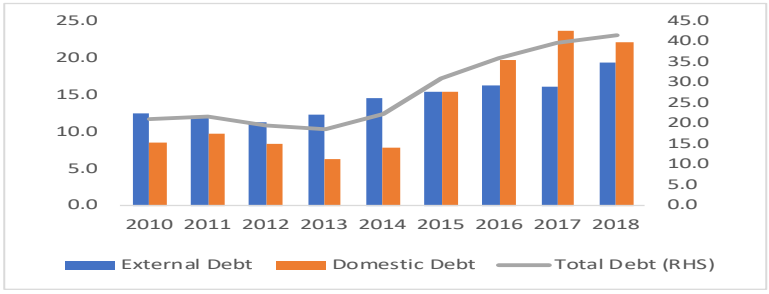
[5] In the paper, debt stocks are measured at the end of the year. For instance, 2018 debt refers to the debt at the end of 2018.

(continued)

6. The debt service burden is relatively high in Benin. The ratio of debt service to revenue stands at 55 percent in 2019 and is expected to decrease to around 48 percent on average in the medium term and 22 percent in long run. By comparison, the debt service is projected to account for 29 percent of revenue, on average, in WAEMU countries and 22 percent in all low-income developing countries in 2019.[6]

7. Financial conditions have eased on the regional money and interbank markets since April 2019. Broad money growth remained buoyant in the first half of 2019 on the back of a pickup of net domestic assets, including credit to the private sector which grew by 9.5 percent y-o-y. While bank liquidity was broadly stable, banks started to lower the volume and pricing of their bids for BCEAO refinancing in the second quarter. As a result, the weighted average auction rate on the money market has declined to around 3 percent thereby remaining in the lower half of the BCEAO's monetary policy corridor. The average weekly rate on the interbank market has also declined to below the BCEAO's maximum refinancing rate since April, although transaction volumes have not increased significantly. Meanwhile, access on the regional sovereign security market has continued to be good, with average subscription rates close to 90 percent coupled with some lowering of yields and lengthening of the average maturity. Against this background, the September 2019 Monetary Policy Committee Meeting left policy rates unchanged.

Text Figure 1. Benin: Central Government Debt 2010–18
(in percent of GDP)



Sources: Authorities' data and staff calculations.

STRUCTURE OF DEBT

8. Benin issued its first Eurobond in March 2019. The Eurobond amounted to EUR 500 million (equivalent to 3.9 percent of 2019 GDP) and was two times oversubscribed, attracting EUR 1.1 billion in demand. The issuance was done at favorable terms (see Box 1).

9. The Eurobond, combined with the 2018 debt reprofiling, has titled the composition of the public debt towards external debt. In 2016 and 17, Benin's domestic debt accounted for more than half of total debt (about 60 percent of total debt at end-2017). The October 2018 debt reprofiling operation, which issued cheap and long-term external debt to buy back more expensive and shorter-maturity domestic debt, started to rebalance the composition of the debt stock. As of end-December 2018, external debt represented around 47 percent of the total debt, while the domestic debt accounted for 53

[6] See IMF DSA Database for LICs.

percent of the debt. Then, with the March 2019 Eurobond issuance, the share of external debt increased even more to 58 percent of total debt for 2019.

10. Because of this change in the composition, the authorities are in the process of updating their Medium-Term Debt Strategy (MTDS). The previous MTDS that covered the 2017-21 period, targeted a 50-50 split between domestic and external debt. This split is now outdated following the recent debt operations. The new MTDS 2020-24, which will be published at end-2019, targets a share of external debt to total debt in the range of 55 to 60 percent in the medium term (see Annex III of the fifth review staff report). The document will be implemented on an annual basis through an operational plan that takes into account the specificities of the budget financing. The projected debt composition of the current DSA is broadly consistent with the new MTDS 2020-24.

11. Benin's external public debt is essentially owed to multilateral and bilateral creditors. As of end 2018, Benin's external debt owed to multilateral creditors represented around 66 percent of total external debt against 33 percent held by bilateral creditors. However, the share of the multilateral debt decreased after the issuance of the Eurobond (which is commercial debt) in March 2019. The ratio of multilateral debt to external debt is projected at around 56 percent at end-2019. In addition, the share of concessional loans should decrease and represent 52 percent of total external debt at end-2019.

12. Domestic public debt is dominated by government securities issued in the regional bond market. Benin's domestic public debt has increased significantly between 2014 and 2017, driven mainly by the increasing reliance on the regional bond market to raise funds. About 80 percent of domestic liabilities consisted of government securities issued on the regional financial market at end-2018. Such debt is non-concessional and is associated with roll-over and interest rate risks.

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

Creditors	2018
Multilateral Creditors	1021.0
IDA	541.2
FAD (African Development Fund)	244.4
Others	235.4
Bilateral Creditors	511.0
Others	317.3
People's Republic of China	166.9
Kuwait	26.8

Sources: Beninese authorities and IMF staff calculations.

Text Table 4. Benin: Structure of Domestic Debt, Estimated at end 2018
(in CFAF billion)

Creditors	2018
Other local banks	292.6
Bonds	1267.0
T-bills	160.1
Total domestic debt	1719.7

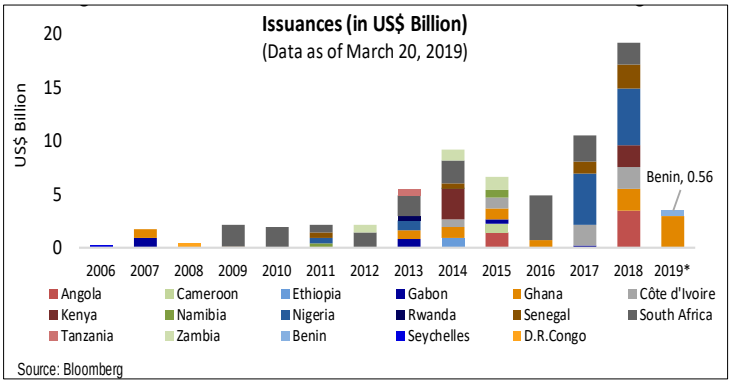
Sources: Beninese authorities and IMF staff calculations.

Box 1. Benin's First Eurobond Issuance

Accommodative global financial conditions have narrowed spreads and boosted capital inflows to sub-Saharan Africa's (SSA) frontier markets since 2009-10. Unconventional monetary policies in advanced economies have produced a prolonged episode of ultra-low global interest rates and extremely low volatility in financial markets, since 2009-10. This, in turn, has contributed to a revival of favorable global funding conditions and widespread financial risk-taking, as developed market investors searched for yield to meet targeted return.

Taking advantage of the benign global financial environment, Benin issued its first Eurobond in 2019 and became the 17th country in SSA to tap international capital markets to meet its financing needs (Text Figure 1). The Eurobond was issued in March 2019, for an amount of EUR 500 million at a yield of 6 percent with a weighted maturity of 6 years. Terms compare very favorably to issuances by Benin on the regional market over the same period (7.0 percent for a 5-year bond issued in early-March 2019).

Text Figure 1: Sub-Saharan African Frontier Market: International Sovereign Bond



While Eurobond issuance provides the Beninese government with access to longer-term financing at favorable rates, it also leads to some rebalancing of risks. The exchange rate risk is estimated to be moderate in the short to medium term given the peg between the FCFA and the euro. The comparison of refinancing risks between the Eurobond and regional issuances, however, is more difficult to assess. On the one hand, the regional market can become very illiquid when bigger WAEMU economies (such as Senegal and Cote d'Ivoire) borrow, leaving limited space for Benin. On the other hand, international markets may shut down for frontier markets in case of a reversal in global risk appetite.[1] Nonetheless, the refinancing risk is expected to decrease over the short term, given the improved access to longer-term financing. At the same time, over the medium-term or once the Eurobond comes close to maturity, refinancing risk is expected to increase.

[1] Faster-than-expected normalization of monetary policies of advanced economies, a strong economic slowdown in the United States, or adverse spillover effects of U.S.-China trade tensions are examples of major events that could result in a decompression of spreads and reversals of capital flows going to frontier markets. This could make the rollover of the Eurobond more difficult and could raise debt servicing costs.

BACKGROUND ON MACROECONOMIC FORECASTS

13. Macroeconomic assumptions have been slightly updated compared to the May 2019 DSA (Text Table 5). Benin's 2019 GDP growth was revised from 6.7 to 6.4 percent as a result of the closure of the border with Nigeria, which is assumed to reopen by the end of 2019. Inflation was revised down to -

0.6 percent in 2019, due to high agricultural production and lower prices in water utilities. Medium-term prospects are strong, driven by the lagged effect of the public investment scaling-up, greater participation of the private sector, strong agricultural production, and the development of new sectors such as tourism and digital economy.

- After rebasing, the 2019 primary deficit declined to 0.4 percent of GDP (compared to 0.6 percent of GDP in 2019 AIV/4th review report). The fiscal position is expected to continue improving over the medium term, with the primary surplus estimated at 0.3 percent of GDP in 2024.

- The non-interest current account deficit is expected to decline gradually in the medium to long term, thanks to the implementation of fiscal consolidation plan and structural reforms to boost competitiveness. Higher exports would result from larger cotton production. Imports should also remain contained due to the scaling-down of public investment and the increase in agricultural production, which should reduce food imports.

14. Risks to the baseline are tilted to the downside. On the fiscal position, the main risks include extra spending pressures related to the political cycle as well as failures to implement key reforms, in particular in the area of revenue administration and the adoption of tax measures. An extended closure of the crossing border with Nigeria, unresolved banking sector problems, a possible contagion of security risks could all worsen Benin's fiscal position. On growth, achieving the expected performance will require that the authorities rigorously implement measures that intent to increase the agricultural production capacity and structural reforms that aim at improving business environment and governance.

Text Table 5. Benin: Macroeconomic Projections

	DSA 2018				DSA 2019			
	2018	Aver.2019-24	2029	2039	2019	Aver.2020-24	2029	2039
	(Percent of GDP, unless otherwise indicated)				*(Percent of GDP, unless otherwise indicated)*			
GDP growth (percent)	6.7	6.7	6.0	5.0	6.4	6.7	5.9	5.0
GDP deflator (percent)	0.8	1.8	2.5	2.9	-0.6	2.0	2.5	2.9
Non-interest current account balance	8.0	5.7	4.4	1.7	4.2	3.6	3.0	1.4
Primary balance	1.8	-0.3	-0.9	-0.9	0.4	-0.2	-0.3	-0.3
Exports	22.1	26.6	29.1	29.1	17.5	18.4	26.1	26.1
Revenues and grants	18.6	19.3	19.7	20.6	14.4	14.5	14.9	15.6

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 2.962	Medium 2.981	Medium 2.981

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

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	3.482	1.34	45%
Real growth rate (in percent)	2.719	5.731	0.16	5%
Import coverage of reserves (in percent)	4.052	38.402	1.56	53%
Import coverage of reserves^2 (in percent)	-3.990	14.747	-0.59	-20%
Remittances (in percent)	2.022	1.237	0.03	1%
World economic growth (in percent)	13.520	3.499	0.47	16%
CI Score			2.962	100%
CI rating			Medium	

REALISM TOOLS

15. The growth projection for 2019 is consistent with the path predicted by the growth and fiscal adjustment tool (Figure 4). There is no deviation between baselines projections and the growth path with LIC's typical multiplier of 0.4. The deviation in 2020 can be explained by several factors:

- The authorities are implementing an ambitious public investment scaling plan, which peaked in in 2017-18. Given the traditional long lags of investment multipliers, we expect the positive growth effects to persist at least until 2019-20.[7]
- The revitalizing of the cotton production will be transmitted to the secondary sector in 2019 and beyond, through the ginned cotton activity, as well as higher export revenues. The cotton activity should remain dynamic in 2019, impacting export revenues and growth in 2020. Furthermore, port activities have been dynamic in 2019 and are expected to remain strong in the medium term.
- A number of large public-private infrastructure projects of the Government's Action Program are expected to start in 2020.

16. 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 2.5 percent of GDP between 2017 and 2020. This is high by historical standards (Figure 4). However, the adjustment will be mostly

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

achieved through a scaling down of public investment, which increased by about 3 percent of GDP between 2016 and 2017.

17. The comparison between public and private investment projections across DSA vintages is impacted by the national accounts rebasing. Using rebased GDPs for the current and the previous DSAs, the trend of the public and private investment would remain unchanged. Benin's medium-term outlook continues to be favorable, with economic growth projected at 6.7 percent over 2020-24, led by rising private investment. At the same time, the public investment ratio is expected to decline over the medium-term.

18. Relative to the 2018 DSA, the drivers of debt dynamics show a higher external debt path, compensated by lower domestic debt. The increase in the external debt stock reflects the March 2019 Eurobond issuance. The authorities also decided to reduce domestic financing by the same amount to leave the 2019 public debt stock unchanged.

RISK RATING AND VULNERABILITIES: EXTERNAL DEBT SUSTAINABILITY RESULTS

19. The external debt burden indicators remain below the policy-dependent thresholds in the baseline scenario. Under 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 17.9 percent of GDP on average over 2019–24, reaching 5.4 percent of GDP in 2039. Thus, the ratio would remain below the corresponding threshold of 40 percent of GDP throughout the projection period.

20. However, the ratio of the present value of external debt to exports exceeds its threshold in the case of an extreme shock to exports. The PV of Public and Publicly Guaranteed (PPG) external debt-to-exports ratio breaches the threshold under the most extreme stress test (MX shock, standard and tailored) in 2021 and 2022. Compared to the May 2019 DSA, the breach is shorter (2 years instead of 4 in the previous vintage). Also, the debt service to exports ratio records a one-off breach under the exports shock. Such a breach is mainly explained by the first repayment of the Eurobond. Other indicators—the debt-to-GDP ratio and debt service indicators— remain below their thresholds under the extreme shock scenarios. Overall, the breach of the PV of Public and Publicly Guaranteed (PPG) external debt-to-exports ratio under the most extreme stress test is what motivates the assessment of moderate risk for external debt.

21. Supplementary modules indicate that Benin has some space to absorb shocks and faces moderate market financing pressures. To add granularity to the moderate risk rating Benin is assessed as having "some space" to absorb shocks, mainly due to the rise in the external debt service-to-revenue indicator from 2024-26 (Figure 5). This indicates that the assessment of moderate risk of external and overall debt distress is fairly robust. However, Benin's EMBI spread (estimated at around 592 bps. as of September 30, 2019) breaches the benchmark of 570 bps. (Figure 6), which means that Benin may face liquidity pressures due to deteriorating market sentiment.

RISK RATING AND VULNERABILITIES: PUBLIC DEBT SUSTAINABILITY RESULTS

22. Total PPG debt (external plus domestic) remains below its respective benchmark under the baseline and shock scenarios. The overall risk of debt distress remains moderate. Total debt does not show any breach in the baseline and shock scenarios. Relative to the previous DSA which showed a small breach of the ratio of PV of public debt to GDP under the real GDP shock scenario, there is no breach for this indicator in the current DSA. The rebasing of GDP is the main factor explaining this improvement.

23. Despite the absence of breach, the moderate risk rating for PPG external debt motivates the moderate risk rating for total debt. Other factors of vulnerability include: the fast increase in domestic debt in past years; the relatively high ratio of debt service to revenue; and the possibility of contingent liabilities related to SOEs.

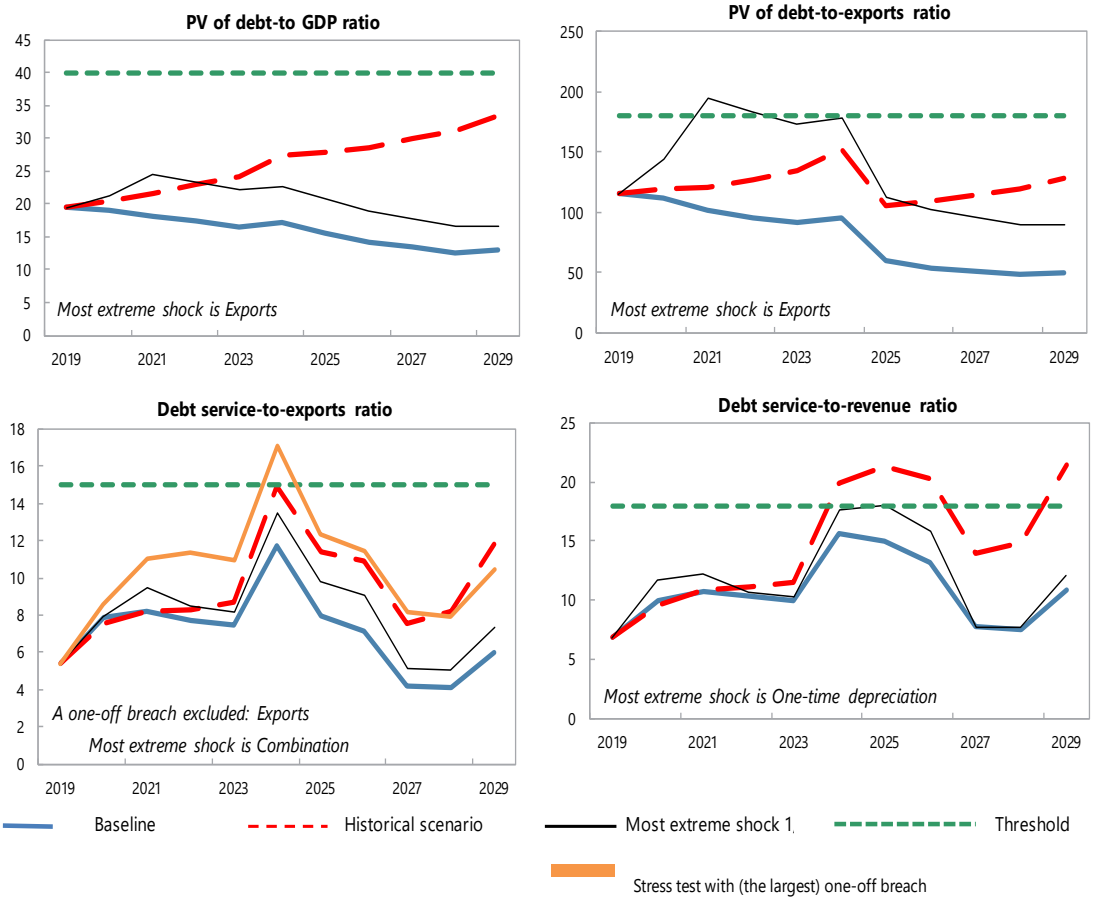
CONCLUSION

24. The updated DSA confirms that Benin stands at moderate risk of external and overall public debt distress. The ratings are unchanged relative to the 2019 Article IV/4th review report (EBS/19/203). Medium-term fiscal consolidation and improved debt management are needed to maintain debt sustainability.

25. The rebasing of national accounts has not fundamentally changed the debt sustainability analysis. Despite the sharp decline in the public debt ratio to GDP, the rebasing of the national accounts does not lead to a significant improvement in debt sustainability. This is mainly because the liquidity ratios, which are expressed as a share of exports or revenues, have not been impacted significantly by the exercise.

26. The authorities concur broadly with staff's assessment. 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.

Figure 1. Benin: Indicators of Public and Publicly Guaranteed External Debt under Alternative Scenarios, 2019–2029



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

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

Borrowing Assumptions for Stress Tests*	Default	User defined
Shares of marginal debt		
External PPG MLT debt	100%	
Terms of marginal debt		
Avg. nominal interest rate on new borrowing in USD	2.6%	2.6%
USD Discount rate	5.0%	5.0%
Avg. maturity (incl. grace period)	23	23
Avg. grace period	5	5

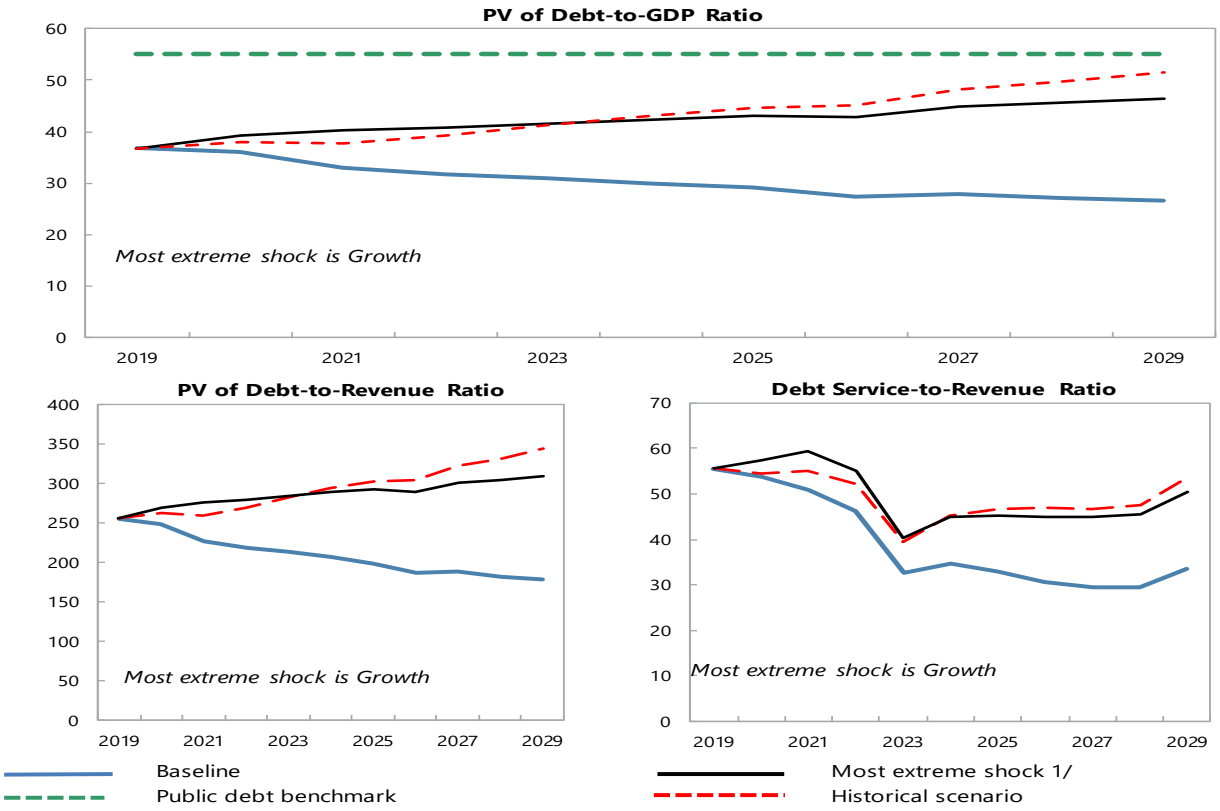
* Note: All the additional financing needs generated by the shocks under the stress tests are assumed to be covered by PPG external MLT debt in the external DSA. Default terms of marginal debt are based on baseline 10-year projections.

Sources: Country authorities; and staff estimates and projections.

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

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

Figure 2. Benin: Indicators of Public Debt Under Alternative Scenarios, 2019–29



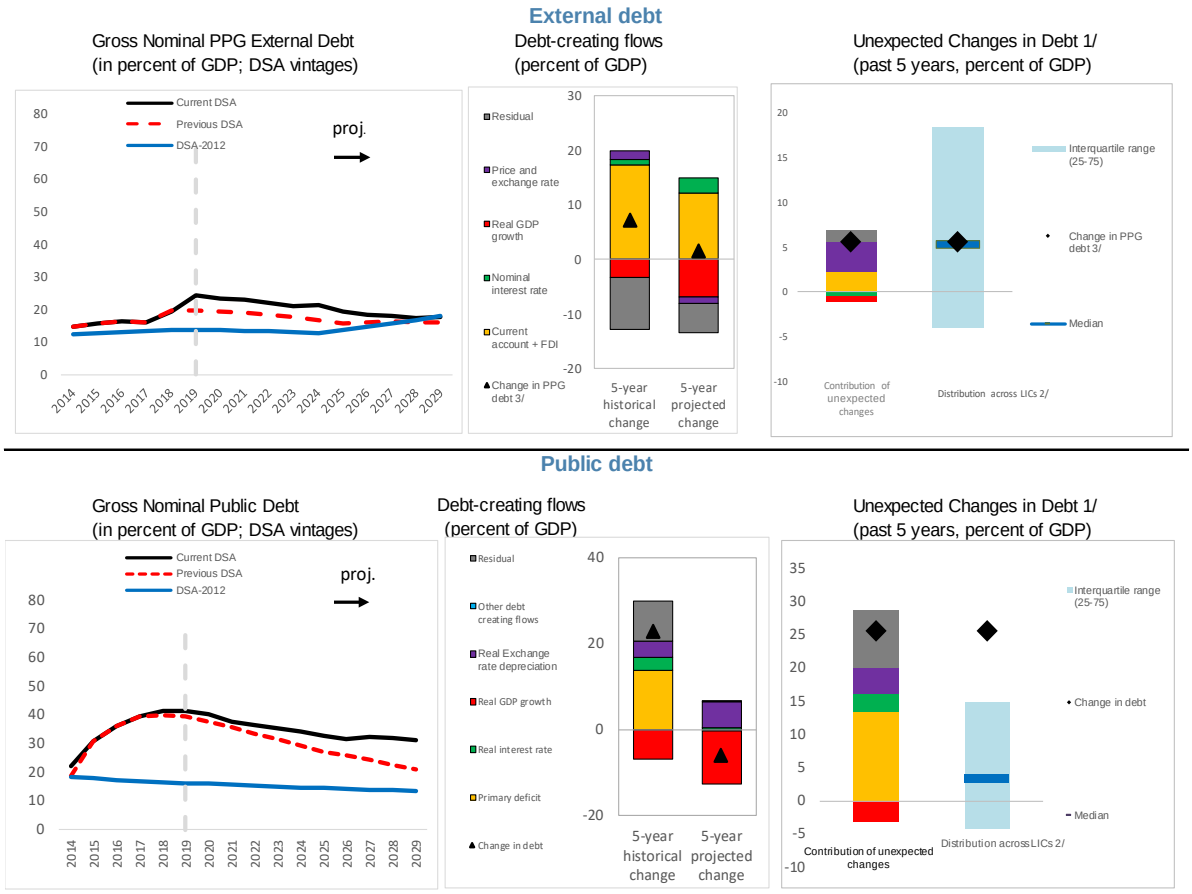
Borrowing Assumptions for Stress Tests*	Default	User defined
Shares of marginal debt		
External PPG medium and long-term	42%	42%
Domestic medium and long-term	55%	55%
Domestic short-term	3%	3%
Terms of marginal debt		
External MLT debt		
Avg. nominal interest rate on new borrowing in USD	2.6%	2.6%
Avg. maturity (incl. grace period)	23	23
Avg. grace period	5	5
Domestic MLT debt		
Avg. real interest rate on new borrowing	5.3%	5.3%
Avg. maturity (incl. grace period)	7	7
Avg. grace period	3	3
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 2029. The stress test with a one-off breach is also presented (if any), while the one-off breach is deemed away for mechanical signals. When a stress test with a one-off breach happens to be the most exterme shock even after disregarding the one-off breach, only that stress test (with a one-off breach) would be presented.

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



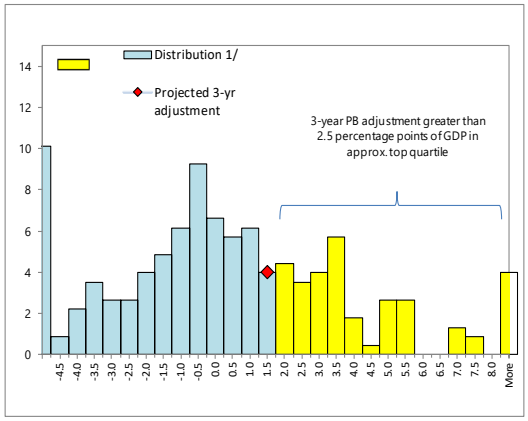
1/ Difference between anticipated and actual contributions on debt ratios.

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.

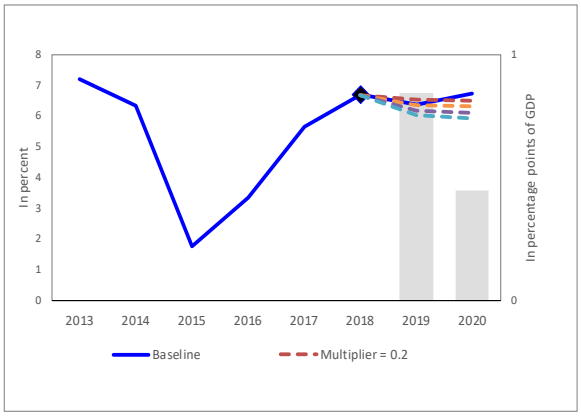
Figure 4. Benin: Realism Tools

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



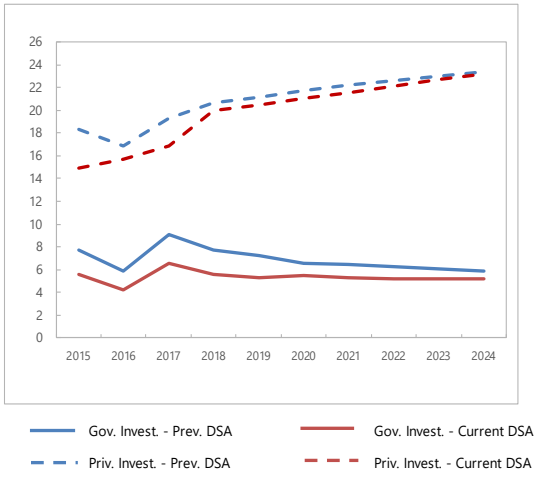
1/ Data cover Fund-supported programs for LICs (excluding emergency financing) approved since 1990. The size of 3-year adjustment from program inception is found on the horizontal axis; the percent of sample is found on the vertical axis.

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)

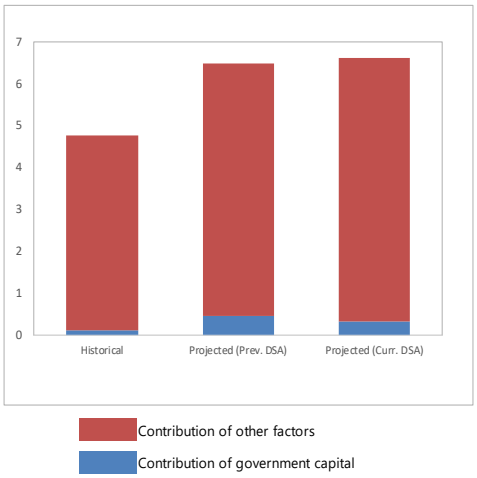
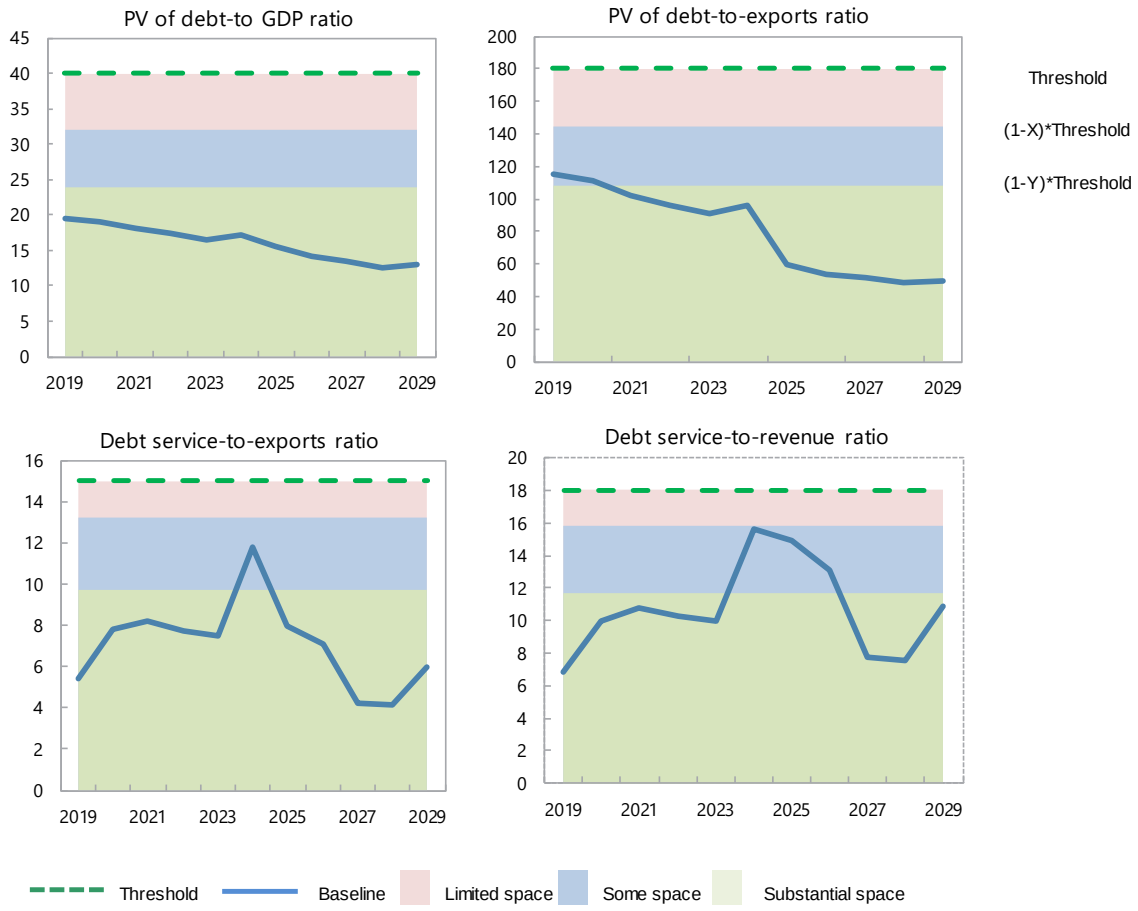


Figure 5. Benin: Qualification of the Moderate Category, 2019–29 1/



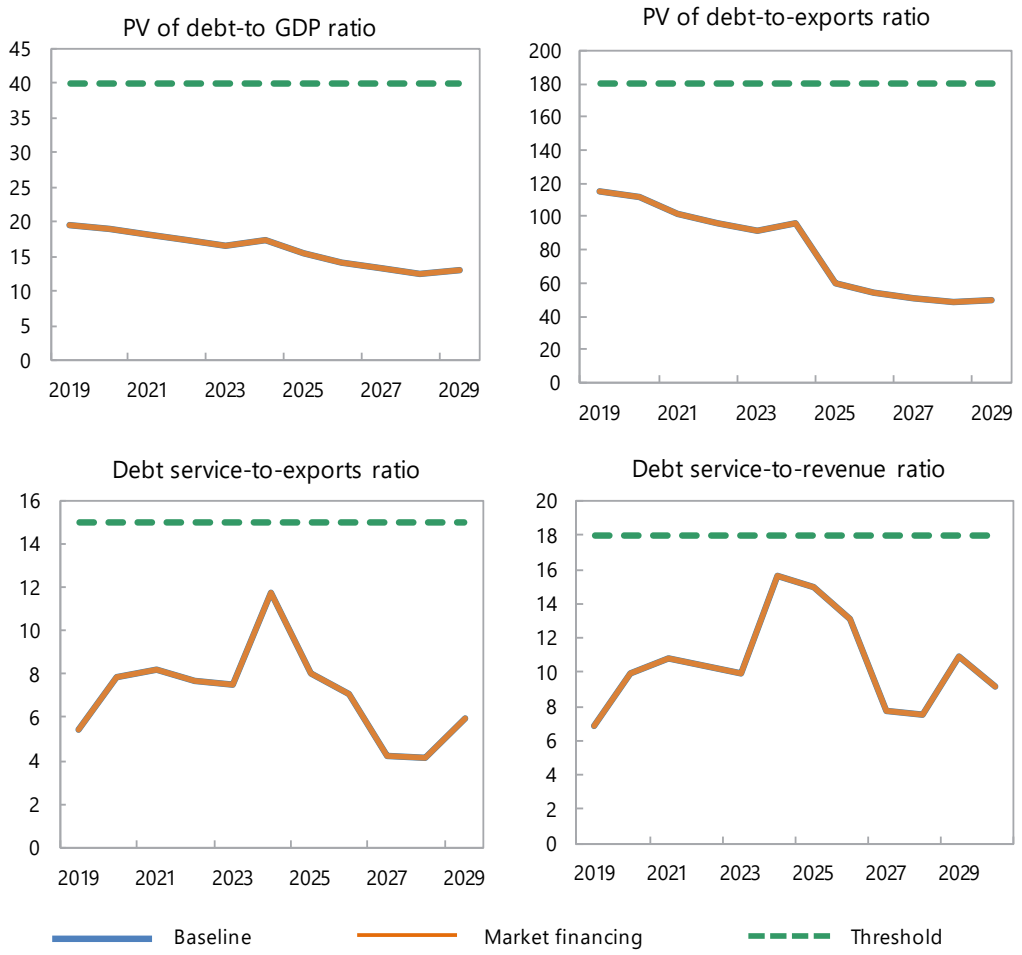
Sources: Country authorities; and staff estimates and projections.

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, 2019–29

	GFN 1/	EMBI 2/
Benchmarks	14	570
Values	8	592
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.



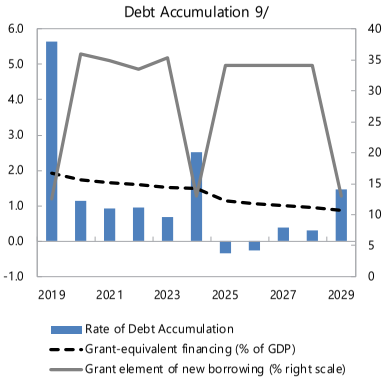
Sources: Country authorities; and staff estimates and projections.

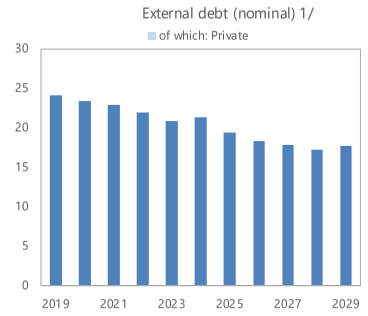
Table 1. Benin: External Debt Sustainability Framework, Baseline Scenario, 2016–39

(In percent of GDP, unless otherwise indicated)

	Actual			Projections								Average 8/	
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2029	2039	Historical	Projections
External debt (nominal) 1/	**16.3**	**16.1**	**19.3**	**24.2**	**23.4**	**22.9**	**22.0**	**20.8**	**21.3**	**17.7**	**8.8**	**14.0**	**20.5**
of which: public and publicly guaranteed (PPG)	**16.3**	**16.1**	**19.3**	**24.2**	**23.4**	**22.9**	**22.0**	**20.8**	**21.3**	**17.7**	**8.8**	**14.0**	**20.5**
Change in external debt	0.8	-0.3	3.3	4.8	-0.8	-0.5	-0.9	-1.2	0.5	0.5	-0.6		
Identified net debt-creating flows	**1.5**	**1.7**	**1.5**	**2.3**	**1.6**	**1.6**	**1.3**	**1.2**	**1.0**	**1.3**	**0.8**	**3.4**	**1.4**
Non-interest current account deficit	**2.8**	**3.9**	**4.3**	**4.5**	**4.3**	**3.9**	**3.7**	**3.5**	**3.3**	**3.1**	**2.6**	**5.3**	**3.5**
Deficit in balance of goods and services	6.7	7.5	7.5	7.5	6.8	5.9	5.1	4.8	4.5	0.9	0.9	**8.6**	**3.6**
Exports	16.6	15.9	17.5	16.8	17.1	17.8	18.1	18.0	18.0	26.1	26.1		
Imports	23.3	23.4	25.0	24.3	24.0	23.7	23.2	22.8	22.4	27.0	27.0		
Net current transfers (negative = inflow)	-3.9	-3.7	-3.5	-3.4	-2.9	-2.4	-1.7	-1.5	-1.4	-2.4	-2.4	**-3.3**	**-2.3**
of which: official	-3.4	-3.2	-3.0	-2.7	-2.1	-1.6	-1.0	-0.8	-0.6	-1.4	-1.4		
Other current account flows (negative = net inflow)	0.0	0.1	0.3	0.3	0.3	0.3	0.3	0.3	0.3	4.6	4.1	**0.0**	**2.2**
Net FDI (negative = inflow)	**-1.0**	**-1.3**	**-1.3**	**-1.4**	**-1.6**	**-1.6**	**-1.6**	**-1.6**	**-1.6**	**-1.6**	**-1.6**	**-1.6**	**-1.5**
Endogenous debt dynamics 2/	**-0.4**	**-0.9**	**-1.6**	**-0.8**	**-1.1**	**-0.8**	**-0.8**	**-0.7**	**-0.8**	**-0.2**	**-0.2**		
Contribution from nominal interest rate	0.2	0.2	0.2	0.4	0.4	0.6	0.6	0.6	0.5	0.7	0.2		
Contribution from real GDP growth	-0.5	-0.9	-1.0	-1.2	-1.5	-1.4	-1.4	-1.3	-1.3	-0.9	-0.4		
Contribution from price and exchange rate changes	-0.1	-0.3	-0.8	...	...	...	...	...	...	...	...		
Residual 3/	**-0.6**	**-2.0**	**1.8**	**2.5**	**-2.4**	**-2.1**	**-2.3**	**-2.4**	**-0.5**	**-0.9**	**-1.5**	**-2.6**	**-1.5**
of which: exceptional financing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Sustainability indicators													
PV of PPG external debt-to-GDP ratio	**...**	**...**	**13.8**	**19.4**	**19.1**	**18.1**	**17.4**	**16.4**	**17.2**	**13.0**	**5.4**		
PV of PPG external debt-to-exports ratio	**...**	**...**	**79.2**	**115.5**	**111.4**	**102.0**	**96.1**	**91.2**	**96.0**	**49.6**	**20.8**		
PPG debt service-to-exports ratio	**3.7**	**6.7**	**3.5**	**5.4**	**7.8**	**8.2**	**7.7**	**7.5**	**11.7**	**6.0**	**2.0**		
PPG debt service-to-revenue ratio	**5.7**	**8.3**	**4.7**	**6.8**	**9.9**	**10.8**	**10.3**	**10.0**	**15.6**	**10.9**	**3.4**		
Gross external financing need (Billion of U.S. dollars)	0.3	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.9	1.1	1.2		
Key macroeconomic assumptions													
Real GDP growth (in percent)	3.3	5.7	6.7	6.4	6.7	6.7	6.7	6.7	6.7	5.9	5.0	**4.3**	**6.4**
GDP deflator in US dollar terms (change in percent)	0.4	1.7	5.3	-5.6	0.9	3.3	3.0	2.9	3.0	2.5	2.9	**-0.2**	**1.7**
Effective interest rate (percent) 4/	1.1	1.6	1.5	2.0	1.9	3.0	3.0	3.0	2.6	4.5	2.2	**1.5**	**3.4**
Growth of exports of G&S (US dollar terms, in percent)	13.8	2.8	23.6	-3.5	9.7	14.6	11.7	9.5	9.6	8.5	8.0	**8.7**	**13.0**
Growth of imports of G&S (US dollar terms, in percent)	-2.5	7.7	20.0	-2.1	6.0	9.2	7.3	8.0	8.2	8.5	8.0	**6.1**	**9.2**
Grant element of new public sector borrowing (in percent)	...	...	...	12.6	35.9	34.9	33.5	35.4	13.0	13.0	30.9	**...**	**28.6**
Government revenues (excluding grants, in percent of GDP)	10.6	12.8	13.0	13.3	13.5	13.5	13.5	13.5	13.5	14.4	15.3	**12.3**	**13.8**
Aid flows (in Billion of US dollars) 5/	0.1	0.1	0.1	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.3		
Grant-equivalent financing (in percent of GDP) 6/	...	...	...	1.9	1.7	1.6	1.6	1.5	1.5	0.9	0.4	**...**	**1.4**
Grant-equivalent financing (in percent of external financing) 6/	...	...	...	25.3	56.0	56.7	56.1	60.1	30.0	27.3	60.0	**...**	**48.5**
Nominal GDP (Billion of US dollars)	12	13	14	14	15	17	19	21	23	34	75		
Nominal dollar GDP growth	3.8	7.4	12.4	0.4	7.7	10.2	9.9	9.8	9.9	8.5	8.0	**4.2**	**8.2**
Memorandum items:													
PV of external debt 7/	...	...	13.8	19.4	19.1	18.1	17.4	16.4	17.2	13.0	5.4		
In percent of exports	...	...	79.2	115.5	111.4	102.0	96.1	91.2	96.0	49.6	20.8		
Total external debt service-to-exports ratio	3.7	6.7	3.5	5.4	7.8	8.2	7.7	7.5	11.7	6.0	2.0		
PV of PPG external debt (in Billion of US dollars)			2.0	2.8	2.9	3.1	3.2	3.4	3.9	4.4	4.1		
(PVt-PVt-1)/GDPt-1 (in percent)				5.6	1.1	0.9	1.0	0.7	2.5	1.5	0.0		
Non-interest current account deficit that stabilizes debt ratio	2.0	4.2	1.1	-0.3	5.0	4.4	4.6	4.7	2.8	2.6	3.3		

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.

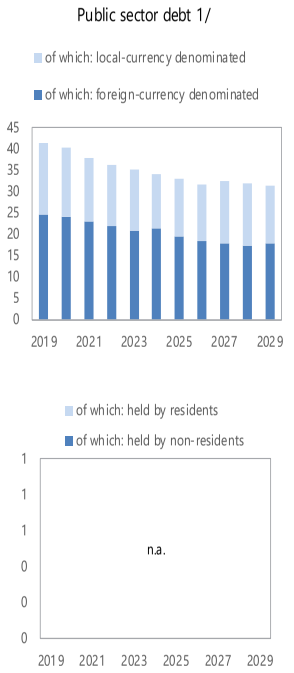
8/ Historical averages are generally derived over the past 10 years, subject to data availability, whereas projections averages are over the first year of projection and the next 10 years.

9/ The peak in 2019 and the negative debt accumulation in 2024-26 partly reflect the Eurobond operation.

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

	Actual					Projections								Average 6/	
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2029	2039	Historical	Projections
Public sector debt 1/	22.3	30.9	36.1	39.7	41.5	41.4	40.4	37.8	36.4	35.3	34.1	31.4	25.1	27.0	35.1
of which: external debt	14.5	15.5	16.3	16.1	19.3	24.2	23.4	22.9	22.0	20.8	21.3	17.7	8.8	14.0	20.5
Change in public sector debt	3.8	8.6	5.2	3.7	1.8	-0.1	-1.0	-2.6	-1.4	-1.1	-1.2	-0.4	-0.7		
Identified debt-creating flows	1.9	6.9	3.6	0.7	0.7	0.4	-1.5	-1.9	-1.7	-1.6	-1.7	-0.4	-0.6	1.3	-0.9
Primary deficit	1.4	5.0	3.4	2.8	1.3	0.4	0.0	-0.2	-0.3	-0.3	-0.3	-0.3	-0.3	1.8	-0.2
Revenue and grants	12.6	12.6	11.1	13.6	13.6	14.4	14.5	14.5	14.5	14.5	14.5	14.9	15.6	13.3	14.6
of which: grants	0.7	0.4	0.5	0.8	0.6	1.1	1.0	1.0	1.0	1.0	1.0	0.5	0.3		
Primary (noninterest) expenditure	13.9	17.6	14.5	16.3	14.9	14.8	14.5	14.3	14.2	14.2	14.2	14.5	15.2	15.1	14.4
Automatic debt dynamics	0.5	1.9	0.2	-2.1	-0.5	0.0	-1.5	-1.7	-1.4	-1.3	-1.4	-0.1	-0.2		
Contribution from interest rate/growth differential	-1.5	2.5	-0.7	-1.5	-2.7	-0.6	-2.7	-3.1	-2.8	-2.6	-2.6	-1.0	-0.7		
of which: contribution from average real interest rate	-0.4	2.9	0.3	0.4	-0.2	1.9	-0.1	-0.6	-0.4	-0.3	-0.4	0.7	0.6		
of which: contribution from real GDP growth	-1.1	-0.4	-1.0	-1.9	-2.5	-2.5	-2.6	-2.5	-2.4	-2.3	-2.2	-1.8	-1.2		
Contribution from real exchange rate depreciation	2.0	-0.6	0.9	-0.6	2.2	...	...	...	...	...	...	...	...		
Other identified debt-creating flows	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	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	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	0.0	0.0		
Residual	1.9	1.7	1.6	3.0	1.0	0.1	1.7	0.7	1.6	1.8	1.8	0.9	0.3	1.1	1.1
Sustainability indicators															
PV of public debt-to-GDP ratio 2/	...	...	...	...	36.5	36.8	36.0	33.0	31.7	30.9	30.0	26.6	21.7		
PV of public debt-to-revenue and grants ratio	...	...	...	...	269.0	255.5	248.6	227.5	218.9	212.8	206.6	178.8	139.6		
Debt service-to-revenue and grants ratio 3/	38.2	43.2	48.4	40.2	64.7	55.6	53.7	50.9	46.2	32.6	34.8	33.4	23.6		
Gross financing need 4/	6.2	10.5	8.8	8.2	10.1	8.3	6.2	6.2	6.1	4.8	5.5	4.6	3.3		
Key macroeconomic and fiscal assumptions															
Real GDP growth (in percent)	6.4	1.8	3.3	5.7	6.7	6.4	6.7	6.7	6.7	6.7	6.7	5.9	5.0	4.3	6.4
Average nominal interest rate on external debt (in percent)	1.3	1.5	1.2	1.7	1.4	2.1	1.9	3.0	2.9	3.0	2.6	4.5	2.2	1.5	3.4
Average real interest rate on domestic debt (in percent)	2.3	3.1	4.2	6.8	5.5	7.7	7.3	5.8	7.0	7.2	6.3	9.6	6.7	1.8	8.8
Real exchange rate depreciation (in percent, + indicates depreciation)	18.3	-3.7	6.3	-3.9	16.1	...	...	...	...	...	...	...	...	4.1	...
Inflation rate (GDP deflator, in percent)	-0.2	0.9	0.7	-0.4	0.7	-0.7	1.2	2.3	2.3	2.3	2.3	2.5	2.9	1.8	1.9
Growth of real primary spending (deflated by GDP deflator, in percent)	1.8	28.6	-14.8	18.9	-3.0	6.2	4.0	5.3	6.0	6.7	6.7	6.4	5.5	5.6	6.2
Primary deficit that stabilizes the debt-to-GDP ratio 5/	...	...	-1.8	-0.9	-0.5	0.5	1.0	2.4	1.1	0.8	0.9	0.1	0.4	-1.1	0.7
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	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 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.

Table 3. Benin: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2019–29 (in percent)

	Projections 1/										
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
PV of debt-to GDP ratio											
Baseline	19	19	18	17	16	17	16	14	13	13	13
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2019-2029 2/	19	20	22	23	24	27	28	29	30	31	33
B. Bound Tests											
B1. Real GDP growth	19	20	21	20	19	20	18	16	15	14	15
B2. Primary balance	19	21	23	22	21	21	20	18	17	16	17
B3. Exports	19	21	24	23	22	23	21	19	18	17	17
B4. Other flows 3/	19	20	20	19	18	19	17	15	15	14	14
B5. One-time 30 percent nominal depreciation	19	24	19	18	17	18	16	14	14	13	14
B6. Combination of B1-B5	19	23	21	20	19	20	18	16	15	15	15
C. Tailored Tests											
C1. Combined contingent liabilities	19	22	22	21	20	20	19	18	17	16	17
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	19	19	18	17	16	17	16	14	13	13	13
Threshold	40	40	40	40	40	40	40	40	40	40	40
PV of debt-to-exports ratio											
Baseline	116	111	102	96	91	96	60	54	51	48	50
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2019-2029 2/	116	120	121	127	134	153	106	109	115	119	128
B. Bound Tests											
B1. Real GDP growth	116	111	102	96	91	96	60	54	51	48	50
B2. Primary balance	116	121	128	121	114	118	75	69	66	63	64
B3. Exports	116	144	**195**	**183**	174	179	113	103	96	90	90
B4. Other flows 3/	116	117	112	106	100	105	65	59	56	53	54
B5. One-time 30 percent nominal depreciation	116	111	83	78	74	80	49	44	42	40	42
B6. Combination of B1-B5	116	132	102	118	112	118	73	66	62	59	61
C. Tailored Tests											
C1. Combined contingent liabilities	116	130	121	115	109	114	73	67	65	62	64
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	116	111	102	96	91	96	60	54	51	48	50
Threshold	180	180	180	180	180	180	180	180	180	180	180
Debt service-to-exports ratio											
Baseline	5	8	8	8	7	12	8	7	4	4	6
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2019-2029 2/	5	8	8	8	9	15	11	11	8	8	12
B. Bound Tests											
B1. Real GDP growth	5	7	7	7	7	11	8	7	4	4	6
B2. Primary balance	5	8	9	9	9	13	9	8	5	5	7
B3. Exports	5	9	11	11	11	**17**	12	11	8	8	10
B4. Other flows 3/	5	7	8	7	7	11	8	7	5	5	6
B5. One-time 30 percent nominal depreciation	5	7	7	6	6	10	8	7	3	3	5
B6. Combination of B1-B5	5	8	9	8	8	14	10	9	5	5	7
C. Tailored Tests											
C1. Combined contingent liabilities	5	8	9	8	8	12	8	7	5	5	6
C2. Natural disaster	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C3. Commodity price	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C4. Market Financing	5	8	8	8	7	12	8	7	4	4	6
Threshold	15	15	15	15	15	15	15	15	15	15	15
Debt service-to-revenue ratio											
Baseline	6.8	9.9	10.8	10.3	10.0	15.6	14.9	13.1	7.7	7.5	10.9
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2019-2029 2/	7	10	11	11	12	**20**	**21**	**20**	14	15	**22**
B. Bound Tests											
B1. Real GDP growth	7	10	11	11	10	17	17	15	9	9	12
B2. Primary balance	7	10	12	12	12	17	16	15	10	10	13
B3. Exports	7	9	10	11	10	16	16	15	11	10	13
B4. Other flows 3/	7	9	10	10	9	15	15	14	9	8	12
B5. One-time 30 percent nominal depreciation	7	12	12	11	10	18	**18**	16	8	8	12
B6. Combination of B1-B5	7	10	12	11	10	17	17	16	9	9	13
C. Tailored Tests											
C1. Combined contingent liabilities	7	10	11	11	11	16	16	14	8	8	12
C2. Natural disaster	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C3. Commodity price	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C4. Market Financing	7	10	11	10	10	16	15	13	8	8	11
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, 2019–29 (in percent)

	Projections 1/										
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
PV of Debt-to-GDP Ratio											
Baseline	37	36	33	32	31	30	29	27	28	27	27
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2019-2029 2/	37	38	38	39	41	43	45	45	48	50	52
B. Bound Tests											
B1. Real GDP growth	37	39	40	41	42	42	43	43	45	46	46
B2. Primary balance	37	39	41	39	38	37	36	34	35	34	33
B3. Exports	37	38	39	37	36	35	34	32	32	31	30
B4. Other flows 3/	37	37	35	33	32	32	31	29	29	28	28
B5. One-time 30 percent nominal depreciation	37	39	35	32	31	29	27	25	24	23	21
B6. Combination of B1-B5	37	38	38	37	37	36	35	34	34	34	33
C. Tailored Tests											
C1. Combined contingent liabilities	37	43	40	39	38	37	36	34	34	33	32
C2. Natural disaster	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C3. Commodity price	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C4. Market Financing	37										
Public debt benchmark	**55**	**55**	**55**	**55**	**55**	**55**	**55**	**55**	**55**	**55**	**55**
PV of Debt-to-Revenue Ratio											
Baseline	255	249	227	219	213	207	199	187	188	182	179
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2019-2029 2/	255	263	260	270	283	295	303	305	322	332	344
B. Bound Tests											
B1. Real GDP growth	255	270	276	279	285	290	293	290	301	304	310
B2. Primary balance	255	268	280	271	264	257	248	234	233	226	221
B3. Exports	255	262	268	258	250	242	232	218	216	208	202
B4. Other flows 3/	255	255	240	231	224	217	209	196	196	190	186
B5. One-time 30 percent nominal depreciation	255	273	241	225	213	201	187	169	164	153	144
B6. Combination of B1-B5	255	260	264	257	253	248	241	229	231	226	222
C. Tailored Tests											
C1. Combined contingent liabilities	255	298	276	266	260	253	243	230	229	222	217
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	255										
Debt Service-to-Revenue Ratio											
Baseline	56	54	51	46	33	35	33	31	29	29	33
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2019-2029 2/	56	55	55	52	39	45	47	47	47	48	54
B. Bound Tests											
B1. Real GDP growth	56	57	59	55	40	45	45	45	45	45	50
B2. Primary balance	56	54	54	52	37	42	43	41	39	37	39
B3. Exports	56	54	51	47	34	36	34	32	32	32	36
B4. Other flows 3/	56	54	51	47	33	35	33	31	30	30	34
B5. One-time 30 percent nominal depreciation	56	51	51	47	34	39	37	34	30	30	34
B6. Combination of B1-B5	56	53	55	51	36	41	41	39	37	35	38
C. Tailored Tests											
C1. Combined contingent liabilities	56	54	56	50	36	45	43	40	38	33	37
C2. Natural disaster	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C3. Commodity price	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C4. Market Financing											

Sources: Country authorities; and staff estimates and projections.
1/ 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.