INTERNATIONAL MONETARY FUND

NICARAGUA

STAFF REPORT FOR THE 2017 ARTICLE IV CONSULTATION—DEBT SUSTAINABILITY ANALYSIS

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Risk of external debt distress	Moderate
Augmented by significant risks stemming from domestic public and private external debt	Yes

This debt sustainability analysis (DSA) indicates that Nicaragua's risk of external debt distress remains moderate. Real GDP growth projections for the forecast horizon have been revised upward, based on improvements in infrastructure, and financing on relatively concessional terms is expected to continue. Nevertheless, external risks have also increased, which argues against a low risk rating.[1] Notably the risks arising from the unwinding of the Venezuela cooperation, as well as the potential passage of the NICA Act[2], drive staff's assessment that Nicaragua remains at a moderate risk of external debt distress. Moreover, the external public risk rating continues to be augmented by risks stemming from domestic public debt and external private debt. The former is related to the financial problems of the social security institute (INSS) which, in the absence of policy action, is expected to run increasingly larger deficits due to demographic dynamics. External private debt risks result from debt with Venezuela, which has financed some government social programs and public infrastructure, among other investments. The DSA, therefore, underscores the need for Nicaragua to continue to borrow as much as possible on concessional terms, to implement comprehensive social security reforms, and to strengthen fiscal and external buffers. The authorities should also increase oversight of private debt, remain vigilant with respect to the risks posed by the unwinding of the oil collaboration with Venezuela, and should try to advance as much as possible on negotiations for relief of outstanding debt.

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[1] The World Bank's Country Policy and Institutions Assessment (CPIA) ranks Nicaragua as a medium performer in terms of the quality of policy and institutions (the average CPIA in 2013–15 is 3.73). Thus, the external debt burden thresholds for Nicaragua are (i) PV of debt-to-GDP ratio: 40 percent; (ii) PV of debt-to-exports ratio: 150 percent; (iii) PV of debt-to-revenue ratio: 250 percent; (iv) debt service-to-exports ratio: 20 percent: and (v) debt service-to-revenue ratio: 20 percent.

[2] The Nicaragua Investment Conditionality Act (NICA) Act is a bill currently being considered by the U.S. Congress which would require U.S. Executive Directors to oppose loans to Nicaragua from IFIs unless the Nicaraguan government takes concrete steps to hold free, fair and transparent elections. See the text of the bill H.R. 1918.

BACKGROUND

1. Nicaragua's debt statistics are reported at the consolidated public sector (CPS) level. This DSA therefore covers the consolidated debt of the budgetary central government, decentralized entities, the state-owned enterprises, and the central bank.[3] Consistent with the 2013 DSA and the 2015 DSA, we assume that relief has been obtained on HIPC terms for all eligible debt where negotiations are still pending.[4]

2. There is a large stock of debt to non-Paris Club creditors which is still pending debt relief under the HIPC Initiative. This debt amounts to about US$1 billion, with total relief expected to be in the range of US$700 million. Most of this debt is on the books of the Central Bank of Nicaragua, and two official creditors account for the bulk of this debt. Although agreements exist between the central bank and these two creditors at a technical level, progress at the political level has been a stumbling block in both cases and discussions have been put on hold for some time. The Nicaraguan authorities expect to resume negotiations in the forthcoming year. This debt is not currently being serviced.

3. Public and publicly guaranteed (PPG) external debt stands at 32 percent of GDP and is mostly owed to multilateral creditors. About 76 percent of external debt is held by multilaterals, with the largest being the Inter-American Development Bank (IaDB), accounting for 38 percent of outstanding external PPG debt, followed by the Central American Bank for Economic Integration (CABEI) at 14 percent. Nicaragua is eligible for blended loans from both the IaDB and CABEI. In the IaDB's case, 40 percent of new funding is on a highly concessional basis and 60 percent carries a low but market-linked adjustable rate. Until 2015, Nicaragua was subject to a concessionality requirement by the World Bank as an IDA-only country and contracted loans had a grant element of at least 35 percent; however, since 2015 it has been an IDA-gap country and this requirement no longer applies. About 72 percent of PPG external debt outstanding is at fixed rates.

	2013	2014	2015	2016
	External debt in USD			
Official multilateral 1/	2,502	2,703	2,954	3,165
Official bilateral	1,014	1,002	982	994
Commercial	7	5	4	10
TOTAL	3,522	3,711	3,940	4,169
	External debt in % of GDP			
Official multilateral	23	23	24	25
Official bilateral	9	9	8	8
Commercial	0	0	0	0
TOTAL	33	32	32	32
	Share of total external debt			
Official multilateral	71	73	75	76
Official bilateral	29	27	25	24
Commercial	0	0	0	0

1/ Does not include SDR allocations
Source: Central Bank of Nicaragua and staff calculations

[3] The authorities are in the process of compiling official domestic debt of state-owned enterprises and municipalities, which was previously not included in the otherwise comprehensive institutional coverage of the public sector, a development which staff welcomes. For the 2017 DSA, the authorities have made available preliminary data on the domestic debt of SOEs and municipalities as of end-2016, which has been included in staff's estimate of the debt of the consolidated public sector.

[4] All discussions in this note refer to this definition of public debt. Thus, there are differences with official statistics, which include debt pending HIPC relief.

4. Public domestic debt is about 10 percent of GDP. Of this, 28 percent is comprised of *Bonos de la República de Nicaragua* (BRNs), which are government bonds with an original maturity of 3–7 years. Another 24 percent is *Bonos Para la Indemnización* (BPIs), issued as compensation to those who lost property in the expropriations of the 1980s. BPIs are not used for funding purposes, and their issuance has declined substantially in recent years as most claims have been resolved. The total stock of BPIs has declined from US$975 million at end-2006 to US$312 million at end-2016.[5] A further 11 percent consists of *Bonos Bancarios* (banking bonds), which were issued to banks during the banking crisis of the early 2000s and here again the outstanding stock is gradually declining. About 29 percent represents the domestic debt of SOEs and municipalities, mainly to the banking sector and institutions associated with the cooperation with Venezuela, such as CARUNA, Bancorp and ALBANISA. The remainder are outstanding central bank securities used by the central bank for open market operations. Of these domestic debt instruments, most are dollar-denominated or dollar indexed, except for a portion of the banking bonds. A recent joint technical assistance mission from the Bank, Fund and CEMLA to promote the development of the domestic debt market, identified market segmentation as an issue which needs to be addressed going forward. This is due to the existence of several debt instruments coupled with a small investor base. The mission made recommendations on ways to increase liquidity in this market, including by issuing BRNs with shorter maturities.

	2013	2014	2015	2016
Domestic debt in USD				
BRNs 1/	62	111	179	348
BPI/CBPI 1/	456	407	355	301
Banking bonds	164	157	149	139
BCN securities	163	132	128	90
SOE & municipalities 2/	166	146	340	356
TOTAL	1,012	955	1,151	1,233
Domestic debt as a % of GDP				
BRNs	1	1	1	3
BPI/CBPI	4	4	3	2
Banking bonds	2	1	1	1
BCN securities	2	1	1	1
SOE & municipalities	2	1	3	3
TOTAL	9	8	9	10
Share of total domestic debt				
BRNs	6	12	16	28
BPI/CBPI	45	43	31	24
Banking bonds	16	16	13	11
BCN securities	16	14	11	7
SOE & municipalities	16	15	30	29

1/ Consolidates out bonds held by the reserve fund of INSS
2/ Pre-2016 data represents staff estimates. End-2016 data is preliminary.
Sources: National authorities and staff calculations

5. Fiscal risks arise from several sources. Nicaragua is vulnerable to the impact of climate change and disasters such as earthquakes and floods, which can have considerable fiscal impacts (see Selected Issues Paper). The authorities are in the process of broadening the scope of debt statistics by compiling data on domestic debt of municipalities and SOEs. Preliminary data was provided to staff and is incorporated in this analysis. The financial sector is sound and well-supervised, although there are gaps in the supervisory perimeter. Box 3 of the Staff Report highlights the main fiscal risks for Nicaragua and stresses areas where data and analysis could be improved.

6. Private external debt has increased in recent years due to the oil cooperation with Venezuela, but is on a declining trend. Private external debt rose by about 8 percentage points of GDP between 2010 and 2013, when the flows from Venezuela were at their peak. Since 2013, it has been declining gradually, and stood at 45 percent of GDP at end-2016.

[5] Includes the BPIs held by INSS, which are consolidated out of total debt at the CPS level.

UNDERLYING ASSUMPTIONS

7. The macroeconomic framework underlying the DSA assumes a continuation of the current relatively favorable macroeconomic conditions. Real GDP growth is assumed to converge to its potential level of 4.5 percent from 2019 onwards. Staff has revised up its estimate of potential GDP growth from 4 percent in the 2013 and 2015 DSAs (Box 1 of the Staff Report), grounded in revised quantitative estimates and considering the significant investments in infrastructure over the past decade. Inflation should continue to be anchored by the crawling peg exchange rate regime, with the GDP deflator in dollar terms broadly reflecting U.S. inflation.

8. On the external side, the baseline scenario assumes that:

- The non-interest current account deficit will remain between 6½ and 8 percent of GDP, slightly higher than the 2015 DSA assumptions. This is due in part to the higher growth rate and propensity to import, which is only partially compensated by a marginally lower oil price forecast.[6] Remittances will decline slightly as a percentage of GDP from 9½ percent to 9 percent over the medium term because of slightly lower comparative average GDP growth in source countries.

- FDI inflows will moderate somewhat from their 10-year historical average of 6½ percent of GDP as investment in the telecommunications and energy sectors slows.

- External borrowing by the public sector will remain at 3.9 percent of GDP annually over the medium term, and will continue to be sourced mainly from multilateral creditors, although with declining concessionality.

- The 2016 revision of the terms of the Venezuela cooperation has resulted in a shift in the assumptions on the flows from Venezuela. Concessional financing flows are assumed to continue but at a level of about 0.3 percent of GDP annually. This is substantially lower than in the 2015 DSA which assumed a gradual decline in financing from 2.3 percent in 2017 to 0.9 percent in 2037. The resulting net outflows to Venezuela are expected to gradually decline from around 1 percent of GDP in 2017 to 0.1 percent of GDP by 2037.

9. The baseline scenario for the public debt DSA assumes:

- A steadily rising primary deficit beyond 2019. This is driven by an assumption that public investment will remain at current levels and that pensions and healthcare spending of the social security institute will continue to grow in percentage of GDP terms, due to demographic factors.

- The liquid assets of the INSS reserve fund are projected to be depleted by 2019 and it is assumed that transfers from the budget are required to finance its deficits up until 2037. The

[6] The 2006-16 external sector statistics series were extensively revised in 2017. Therefore, the 2015 DSA baseline is not directly comparable with the 2017 DSA baseline.

difference between the CPS primary balance, revenue, and expenditure projections from the 2015 DSA is mainly due to refinements in the projection methodology and less optimistic assumptions on the expansion of INSS's active coverage, defined as INSS contributors as a percentage of the labor force. External grants have also been revised downwards relative to the 2015 DSA, and are projected to stabilize at 0.6 percent of GDP.

- The real interest rate on public debt declines initially due to higher inflation, declining domestic debt, and a favorable external financing profile, but then begins to rise because of increased domestic bond issuance and a reduced grant element from external financing sources. Domestic debt issuance is the residual and no further issuance of BPIs is assumed.

Key Macroeconomic Assumptions Underlying the DSA for the Baseline Scenario

	Current DSA				2015 DSA				Historical averages
	2016	2017 (p)	2017-2022	2023-2037	2016 (p)	2017 (p)	2015-2020	2021-2035	2010-2016
Real GDP growth (in percent)	4.7	4.5	4.5	4.5	4.2	4.0	4.0	4.0	5.2
GDP deflator in US$ terms (in percent)	-0.9	0.8	1.9	2.1	1.1	1.8	1.3	2.1	1.6
Non-interest current account (in percent of GDP)	-6.8	-6.9	-7.0	-7.3	-6.6	-7.1	-6.8	-6.9	-8.0
Net FDI (in percent of GDP)	6.5	6.3	6.2	6.1	6.2	6.1	6.0	5.8	6.8
Primary balance (in percent of GDP)	-1.2	-1.1	-1.2	-2.3	-1.4	-1.6	-1.4	-1.4	-0.3
Revenue and grants (in percent of GDP)	28.8	28.8	28.6	28.2	29.4	29.3	29.4	30.3	27.3
Primary expenditure (in percent of GDP)	30.1	29.9	29.8	30.5	30.7	30.8	30.8	31.7	27.5
Ave. real int. rate on public debt (FX-denominated)	1.8	1.6	0.4	1.9	1.5	1.1	1.3	2.3	1.3

EXTERNAL DEBT SUSTAINABILITY

10. The evolution of external debt in the baseline scenario is relatively benign. PPG external debt is expected to increase slightly over the projection period in percent of GDP terms (Table 1 and Figure 1). The present value of PPG external debt will rise from 21 percent to 28 percent of GDP, but will remain well under the threshold of 40 percent. A similar trend—a slight increase but still under the threshold—can be observed for other solvency and liquidity indicators (Figure 1). At the same time, private external debt is projected to decline as the debt owed to Venezuela is paid down.

11. Two of the standardized stress scenarios exhibit a small breach of the thresholds for external PPG debt (Table 2 and Figure 1). This includes the shock of a one-time nominal depreciation of 30 percent in 2018. Under the probability approach, however, the probability of debt distress is lower than the threshold value, so this breach is not considered in formulating the external risk rating.[7] Additionally, given the crawling peg exchange rate regime, staff considers such a depreciation to be unlikely. The terms (interest rate) shock of 2 percentage points also results in a breach towards the end of the projection

[7] The key difference between the traditional approach and the probability approach is that it incorporates a country's individual CPIA score and average GDP growth rate, whereas the traditional approach uses one of three discrete CPIA values (see 2013 Staff Guidance Note on the Application of the Joint Bank-Fund Debt Sustainability Framework for Low-Income Countries).

period. This is a more likely shock, given the possible passage of the NICA Act and the country's eventual accessing of international financial markets.

12. Private external debt appears to have peaked but risks remain. A significant decline in the inflows from Venezuela implies that from 2017 onwards, there will be net outflows as debt service is higher than new loans. Debt service depends on the capacity of ALBANISA's assets to generate sufficient returns and maintain a low level of losses. Reportedly, the average return on assets during the operation of the oil cooperation with Venezuela has been 7.5 percent, close to the target return of investments of 8 percent, which would indicate a low level of losses. However, neither ALBANISA's nor CARUNA's assets are subject to supervision and externally audited accounts are not published. Thus, the quality of their investment portfolio is unknown.[8]

13. The ALBANISA contingent liability scenario no longer breaches any of the thresholds. As in the 2013 and 2015 DSAs, a customized scenario has been included which assumes a one-time absorption of the private debt to Venezuela at end-2017, amounting to 22 percent of 2017 GDP, or US$3.2 billion. In present value terms, however, the increase in external debt is less significant (from 20 percent of GDP in 2017 to 35 percent of GDP in 2018), due to the concessional terms. Unlike in the 2013 and 2015 DSAs, this scenario no longer breaches the threshold of PV debt-to-GDP, due primarily to a slightly lower stock amount in GDP terms and the upward revisions to GDP growth for the forecast horizon.

14. The adverse scenario presented in the staff report, which simulates the combined impact of a complete halt of flows from Venezuela and the passage of the NICA Act, is included as an additional customized scenario.[9] The Venezuela shock represents the continuation of a declining trend in the cooperation. The assumption is that this results in an additional 0.6 percent of GDP in expenditure as social projects are absorbed by the budget, as well as a reduction in private capital flows beginning in 2017. There is, however, more uncertainty around the impact of the NICA Act. It is not clear yet whether the bill will pass into law, and its potential impact on investment and the availability of concessional resources. Staff's assumptions include a one-time 25 percent reduction in both FDI and domestic investment in 2018 relative to baseline levels, and a reduction by 50 percent of financing from the IaDB and World Bank from 2018 onwards, which is replaced by other external (but less concessional) and domestic sources. At the same time, FDI and loan financing from Venezuela is assumed to come to a complete stop by 2018. The combined impact on FDI is a drop of 1 percentage point of GDP in 2017 due to the Venezuela shock, plus a further 2 percentage points in 2018 (0.4 attributable to Venezuela and 1.6 to the NICA Act) The shocks lead to a gradual increase in the average interest rate on external debt over the baseline.[10] Growth falls from 4.5 percent over the medium term in the baseline to 2.9 percent in 2018, the effective interest rate averages

[8] The obligations are from ALBANISA, a limited liability entity jointly owned by PDVSA (51 percent of capital) and the state-owned oil company, PETRONIC (49 percent of capital). CARUNA, a savings and loans cooperative, acts as the financial agent of ALBANISA for the oil cooperation agreement flows. The authorities have informed staff that the credit risk on the oil collaboration debt is borne exclusively by PDVSA.

[9] The model and assumptions are explained in the Technical Note on Macroeconomic Scenarios in the Selected Issues Paper.

[10] Staff acknowledges that these assumptions are relatively conservative, but considers that they have a realistic probability of materializing, particularly given the importance of FDI from the U.S. in total FDI.

3.7 percent over the medium term, and FDI declines to an average of about 4 percent of GDP. Following the shock, the economy gradually returns to the baseline steady state by 2027.

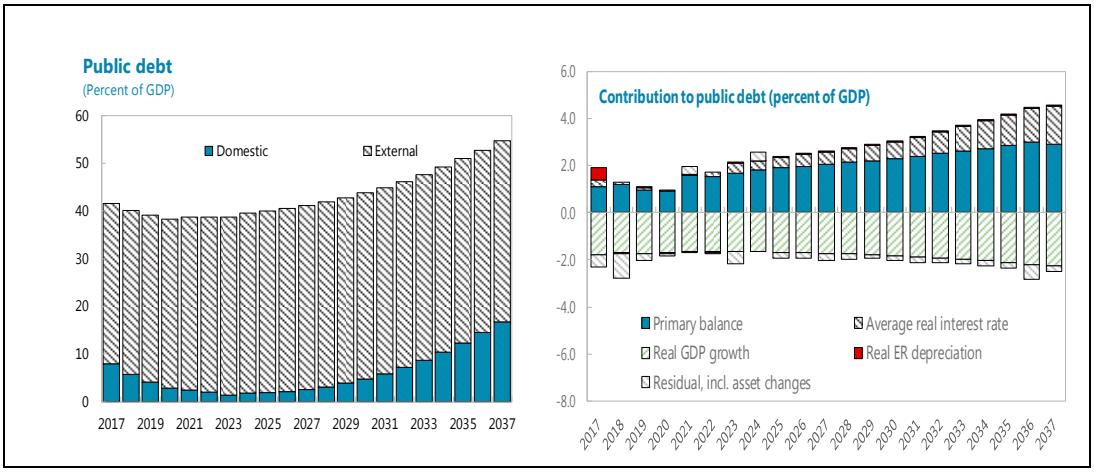
15. The adverse scenario breaches the threshold for PV of external PPG debt-to-GDP. Projections for the adverse scenario show a breach of the threshold by 2022. It also briefly breaches the PV of the debt-to-exports ratio. This result, together with the terms (interest rate) shock, drives staff's assessment that Nicaragua remains at moderate risk of external debt distress.

Key Assumptions for Adverse Scenario: NICA Act/Venezuela

	Current 2017-2027	Adverse 2017-2027
Real GDP growth (in percent)	4.5	4.0
GDP deflator in US$ terms (in percent)	2.0	2.0
Non-interest current account (in percent of GDP)	-7.0	-7.5
FDI (in percent of GDP)	6.1	4.5
Remittances (in percent of GDP)	9.0	9.2
Average effective interest rate (percent)	2.6	3.5

PUBLIC DEBT SUSTAINABILITY

16. In the baseline scenario, public debt is projected to increase to 55 percent of GDP by 2037 (Table 3 and Figure 2). External public debt remains largely stable over the forecast horizon. Domestic public debt is projected to decline initially in percentage of GDP terms as legacy debt is paid down, and then to rise again due to the issuance of new debt to cover pension and healthcare obligations of INSS. The baseline scenario does not breach the PV public debt benchmark of 56 percent of GDP. The chart below shows the contribution of various elements to the increase in debt—the rising primary balance plays the major role, but the increasing average real interest rate also contributes. This is due to an increasing shift to domestic debt, which has a market-determined rate of interest, as well as a gradual decline in access to the most concessional resources of the multilateral development banks.



17. The standardized shock scenarios demonstrate the sensitivity of public debt to growth shocks (Table 4 and Figure 2). The shock scenario which has the most adverse impact by 2027 is a shock to real GDP growth in 2017-2018, where real GDP growth falls to 1.4 percent in these two years (Table 4), demonstrating the impact that just two years of slow growth could have on debt ratios in the medium term. Long run GDP growth at 3.8 percent, one standard deviation below the historical average, instead of 4.5 percent has the most negative impact beyond 2027. A primary balance fixed at current levels, however, would lead to a scenario which is more favorable than the baseline, while the historical scenario, with a lower primary deficit, would result in a decline in public debt. The difference between the baseline and the primary balance scenario illustrates the potential impact of INSS on public debt.

18. The two customized scenarios described in the discussion of external debt sustainability are also applied to the public DSA. A one-off absorption of ALBANISA's debt to Venezuela would increase the public debt-to-GDP ratio from 42 percent in 2017 to 63 percent in 2018, and would breach the PV public debt benchmark by 2035. The adverse scenario, including the impact of the NICA Act and a sudden stop of Venezuela inflows, would exceed the public debt benchmark by 2031.

CONCLUSIONS

19. The staff considers that Nicaragua remains at a moderate risk of external debt distress. Under the baseline projection external debt in PV terms increases only slightly over the projection horizon. The concessional nature of most of Nicaragua's external debt, prudent macroeconomic management, and a continuation of relatively strong FDI inflows and real GDP growth, imply a debt dynamic which is sustainable over the medium term. Nicaragua also appears relatively resilient in some of the standardized shock scenarios. However, the unwinding of the Venezuela cooperation also continues to pose a risk, and the magnitude of negative spillovers from events such as the potential passage of the NICA Act are unknown. These risks may not be fully captured by the standardized shock scenarios. Given the heightened uncertainty at the current juncture, staff believes that it would not be appropriate to change the risk rating.

20. Public debt dynamics show an upward trend in the baseline scenario. In the absence of reform to the social security system, the INSS will run increasing deficits over the next 20 years, which are projected to be financed through issuance of domestic debt. The baseline scenario for the public DSA therefore points to a worsening outlook for public debt over the medium term unless action is taken to

improve the finances of INSS. Several shock scenarios also cross the public debt benchmark, including the two customized scenarios.

21. The authorities questioned aspects of staff's analysis. The authorities consider the assumption of no action on INSS in the baseline scenario to be unrealistic, and note that continued financing of INSS deficits from the budget would not be feasible. Their own baseline scenario therefore has lower primary deficits and shows a decline in the public debt to GDP ratio, as the legacy domestic debt is paid down while external debt remains relatively stable. The authorities also project potential growth at 5 percent to GDP, compared to staff's 4.5 percent. They consider that the impact on investment of the NICA Act is overstated in the adverse scenario, even if the bill were to be passed. Furthermore, they argue that the Venezuela cooperation has already declined significantly and that fiscal and external balances have not been significantly affected. Finally, they reiterated that there is no intention for the government to absorb any of ALBANISA's debt to Venezuela, and that the return on ALBANISA's assets is sufficient to be able to service this debt, even with no additional inflows.

Table 1. Nicaragua: External Debt Sustainability Framework — Baseline Scenario. 2014–37 1/

(In percent of GDP, unless otherwise indicated)

	Actual			Historical Average 6/	Standard Deviation 6/	Projections													
	2014	2015	2016			2017	2018	2019	2020	2021	2022	2017-2022 Average	2023	2024	2025	2026	2027	2037	2023-203 Average
External debt (nominal) 1/	**76.7**	**76.5**	**77.2**			**76.1**	**74.2**	**72.5**	**70.7**	**69.2**	**67.6**		**66.2**	**64.9**	**63.6**	**62.3**	**61.0**	**50.4**	
of which: public and publicly guaranteed (PPG)	32.0	31.7	32.4			33.5	34.2	34.9	35.4	36.0	36.5		37.1	37.6	38.0	38.2	38.4	37.9	
Change in external debt	-1.3	-0.2	0.6			-1.1	-1.9	-1.7	-1.8	-1.5	-1.6		-1.4	-1.3	-1.3	-1.3	-1.3	-0.8	
Identified net debt-creating flows	-5.4	-3.3	-0.7			-1.1	-0.9	-0.9	-0.9	-0.4	-0.2		-0.2	-0.1	0.0	0.2	0.2	1.1	
Non-interest current account deficit	**5.6**	**7.3**	**6.8**	**7.9**	**1.6**	**6.9**	**7.2**	**7.1**	**7.0**	**6.9**	**6.9**	**7.0**	**6.8**	**6.8**	**7.0**	**7.0**	**7.1**	**7.8**	7.3
Deficit in balance of goods and services	16.7	18.1	17.9			17.8	17.9	17.8	17.5	17.2	17.3		17.4	17.4	17.5	17.6	17.6	18.0	
Exports	45.0	40.1	39.0			39.7	38.6	37.8	36.8	36.5	36.4		36.4	36.3	36.3	36.2	36.1	35.8	
Imports	61.6	58.3	56.9			57.5	56.5	55.6	54.4	53.8	53.8		53.8	53.8	53.8	53.8	53.8	53.8	
Net current transfers (negative = inflow)	-12.2	-11.9	-12.0	-12.8	0.8	-12.0	-11.8	-11.7	-11.5	-11.4	-11.2		-11.2	-11.2	-11.2	-11.2	-11.2	-11.2	-11.2
of which: official	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	
Other current account flows (negative = net inflow)	1.1	1.0	0.9			1.1	1.1	1.0	1.0	1.0	0.8		0.6	0.6	0.7	0.7	0.7	1.0	
Net FDI (negative = inflow)	**-6.7**	**-7.1**	**-6.5**	**-6.6**	**1.3**	**-6.3**	**-6.4**	**-6.4**	**-6.4**	**-5.8**	**-6.0**	**-6.2**	**-6.0**	**-6.0**	**-6.0**	**-6.0**	**-6.1**	**-6.1**	-6.1
Endogenous debt dynamics 2/	**-4.4**	**-3.5**	**-1.0**			**-1.7**	**-1.7**	**-1.7**	**-1.5**	**-1.5**	**-1.2**		**-0.9**	**-0.9**	**-0.9**	**-0.9**	**-0.9**	**-0.6**	
Contribution from nominal interest rate	1.5	1.7	1.8			1.6	1.3	1.4	1.6	1.5	1.7		1.9	1.9	1.8	1.8	1.8	1.6	
Contribution from real GDP growth	-3.4	-3.5	-3.5			-3.3	-3.1	-3.1	-3.1	-3.0	-2.9		-2.9	-2.8	-2.7	-2.7	-2.6	-2.2	
Contribution from price and exchange rate changes	-2.4	-1.7	0.7			...	...	...	...	...	...		...	...	...	...	...	...	
Residual (3-4) 3/	**4.2**	**3.2**	**1.3**			**0.0**	**-1.0**	**-0.8**	**-0.9**	**-1.0**	**-1.4**		**-1.3**	**-1.2**	**-1.3**	**-1.4**	**-1.5**	**-1.9**	
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	0.0	0.0	0.0	0.0	
PV of external debt 4/	...	...	66.9			65.5	63.5	61.9	60.4	59.3	57.7		56.2	54.8	53.5	52.3	51.1	42.4	
In percent of exports	...	...	171.3			164.8	164.4	163.5	164.0	162.2	158.5		154.6	150.9	147.5	144.5	141.4	118.7	
PV of PPG external debt	**...**	**...**	**22.1**			**22.9**	**23.6**	**24.3**	**25.1**	**26.1**	**26.6**		**27.1**	**27.5**	**27.9**	**28.3**	**28.5**	**29.9**	
In percent of exports	**...**	**...**	**56.6**			**57.6**	**61.0**	**64.1**	**68.1**	**71.4**	**73.1**		**74.5**	**75.7**	**76.9**	**78.1**	**78.9**	**83.6**	
In percent of government revenues	**...**	**...**	**79.3**			**82.1**	**84.5**	**86.9**	**90.4**	**94.5**	**96.6**		**98.2**	**99.7**	**101.1**	**102.6**	**103.6**	**108.8**	
Debt service-to-exports ratio (in percent)	**13.2**	**15.7**	**13.8**			**15.2**	**14.5**	**14.4**	**14.4**	**13.8**	**14.2**		**14.3**	**13.7**	**13.5**	**13.3**	**13.2**	**11.7**	
PPG debt service-to-exports ratio (in percent)	**2.5**	**3.0**	**1.4**			**4.1**	**3.9**	**3.9**	**3.9**	**4.1**	**4.9**		**5.6**	**5.6**	**5.9**	**6.2**	**6.5**	**7.9**	
PPG debt service-to-revenue ratio (in percent)	**4.4**	**4.6**	**1.9**			**5.9**	**5.4**	**5.3**	**5.2**	**5.5**	**6.5**		**7.3**	**7.3**	**7.8**	**8.1**	**8.6**	**10.3**	
Total gross financing need (Billions of U.S. dollars)	1.1	1.4	1.4			1.7	1.7	1.7	1.8	2.0	2.1		2.2	2.2	2.3	2.4	2.5	3.9	
Non-interest current account deficit that stabilizes debt ratio	6.9	7.4	6.2			8.0	9.1	8.8	8.8	8.3	8.5		8.2	8.2	8.3	8.3	8.5	8.6	
Key macroeconomic assumptions																			
Real GDP growth (in percent)	4.8	4.9	4.7	4.2	2.8	4.5	4.3	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
GDP deflator in US dollar terms (change in percent)	3.2	2.3	-0.9	2.7	3.4	0.8	2.3	2.0	2.2	2.1	2.2	1.9	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Effective interest rate (percent) 5/	2.1	2.4	2.4	2.3	0.1	2.1	1.9	2.1	2.3	2.3	2.6	2.2	3.0	3.0	3.0	3.0	3.0	3.3	3.1
Growth of exports of G&S (US dollar terms, in percent)	7.7	-4.3	1.0	9.9	11.4	7.3	3.7	4.4	4.0	5.8	6.4	5.3	6.5	6.5	6.4	6.5	6.5	6.7	6.5
Growth of imports of G&S (US dollar terms, in percent)	1.7	1.4	1.4	7.8	12.5	6.5	4.8	4.9	4.4	5.5	6.8	5.5	6.7	6.7	6.7	6.7	6.7	6.7	6.7
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	34.2	33.6	33.0	25.3	24.6	26.9	29.6	24.4	24.9	22.8	19.2	19.0	14.2	17.1
Government revenues (excluding grants, in percent of GDP)	25.5	26.3	27.9			27.9	27.9	27.9	27.8	27.6	27.6		27.6	27.6	27.6	27.6	27.5	27.5	27.5
Aid flows (in Billions of US dollars) 7/	0.1	0.1	0.1			0.3	0.3	0.3	0.2	0.2	0.3		0.3	0.3	0.3	0.3	0.3	0.5	
of which: Grants	0.1	0.1	0.1			0.1	0.1	0.1	0.1	0.1	0.1		0.1	0.1	0.2	0.2	0.2	0.3	
of which: Concessional loans	0.0	0.0	0.0			0.2	0.2	0.2	0.1	0.1	0.2		0.2	0.2	0.2	0.1	0.1	0.2	
Grant-equivalent financing (in percent of GDP) 8/	...	...	...			2.2	2.2	2.0	1.7	1.6	1.7		1.6	1.6	1.5	1.4	1.4	1.2	1.3
Grant-equivalent financing (in percent of external financing) 8/	...	...	...			47.3	46.7	44.8	38.5	35.7	37.6		35.5	35.9	34.1	31.0	30.9	26.8	29.4
Memorandum items:																			
Nominal GDP (Billions of US dollars)	11.9	12.7	13.2			13.9	14.9	15.9	16.9	18.1	19.3		20.6	21.9	23.4	25.0	26.6	50.7	
Nominal dollar GDP growth	8.2	7.3	3.8			5.4	6.7	6.6	6.8	6.7	6.8	6.5	6.7	6.7	6.7	6.7	6.7	6.7	6.7
PV of PPG external debt (in Billions of US dollars)			2.9			3.1	3.4	3.8	4.1	4.6	5.0		5.4	5.9	6.4	6.9	7.4	14.8	
(PVt-PVt-1)/GDPt-1 (in percent)						2.0	2.2	2.2	2.5	2.6	2.3	2.3	2.2	2.2	2.2	2.2	2.1	1.9	2.1
Gross workers' remittances (Billions of US dollars)	1.1	1.2	1.3			1.3	1.4	1.5	1.5	1.6	1.7		1.8	1.9	2.1	2.2	2.3	4.5	
PV of PPG external debt (in percent of GDP + remittances)	...	...	20.2			20.9	21.5	22.2	23.0	23.9	24.5		24.9	25.3	25.6	26.0	26.2	27.5	
PV of PPG external debt (in percent of exports + remittances)	...	...	45.5			46.5	49.1	51.5	54.7	57.4	58.9		60.0	60.9	61.9	62.8	63.5	67.1	
Debt service of PPG external debt (in percent of exports + remittances)	...	...	1.1			3.3	3.1	3.1	3.2	3.3	3.9		4.5	4.5	4.7	5.0	5.3	6.4	

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

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

6/ Historical averages and standard deviations are generally derived over the past 10 years, subject to data availability.

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

8/ 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).

Table 2. Nicaragua: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2017–37

(In percent)

	Projections							
	2017	2018	2019	2020	2021	2022	**2027**	2037
PV of debt-to GDP ratio								
Baseline	23	24	24	25	26	27	**29**	30
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2017-2037 1/	23	24	25	26	27	27	**30**	29
A2. New public sector loans on less favorable terms in 2017-2037 2/	23	24	26	28	30	31	**37**	45
A3. Alternative Scenario: Contingent Liability Scenario	22	37	38	38	39	39	**38**	37
A4. Alternative Scenario: NICA Act/Venezuela	23	25	28	32	36	40	**51**	51
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2018-2019	23	24	25	26	27	27	**29**	31
B2. Export value growth at historical average minus one standard deviation in 2018-2019 3/	23	24	28	29	30	30	**31**	30
B3. US dollar GDP deflator at historical average minus one standard deviation in 2018-2019	23	24	25	26	27	27	**29**	31
B4. Net non-debt creating flows at historical average minus one standard deviation in 2018-2019 4/	23	24	25	26	27	27	**29**	29
B5. Combination of B1-B4 using one-half standard deviation shocks	23	24	25	26	27	28	**30**	31
B6. One-time 30 percent nominal depreciation relative to the baseline in 2018 5/	23	32	33	35	36	37	**39**	41
PV of debt-to-exports ratio								
Baseline	58	61	64	69	72	74	**79**	83
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2017-2037 1/	58	62	66	71	74	76	**82**	81
A2. New public sector loans on less favorable terms in 2017-2037 2/	58	63	69	76	82	86	**104**	126
A3. Alternative Scenario: Contingent Liability Scenario	56	97	100	104	106	107	**106**	103
A4. Alternative Scenario: NICA Act/Venezuela	58	64	74	86	97	108	**140**	142
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2018-2019	58	60	63	67	70	72	**77**	80
B2. Export value growth at historical average minus one standard deviation in 2018-2019 3/	58	67	84	88	91	93	**97**	94
B3. US dollar GDP deflator at historical average minus one standard deviation in 2018-2019	58	60	63	67	70	72	**77**	80
B4. Net non-debt creating flows at historical average minus one standard deviation in 2018-2019 4/	58	62	66	70	73	75	**80**	81
B5. Combination of B1-B4 using one-half standard deviation shocks	58	59	63	67	70	72	**77**	80
B6. One-time 30 percent nominal depreciation relative to the baseline in 2018 5/	58	60	63	67	70	72	**77**	80
PV of debt-to-revenue ratio								
Baseline	82	84	87	90	94	97	**104**	109
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2017-2037 1/	82	85	88	93	97	99	**108**	106
A2. New public sector loans on less favorable terms in 2017-2037 2/	82	87	93	100	108	113	**136**	165
A3. Alternative Scenario: Contingent Liability Scenario	82	134	135	138	140	140	**139**	135
A4. Alternative Scenario: NICA Act/Venezuela	82	91	102	116	130	143	**185**	187
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2018-2019	82	85	90	93	98	100	**107**	111
B2. Export value growth at historical average minus one standard deviation in 2018-2019 3/	82	88	101	104	108	110	**114**	110
B3. US dollar GDP deflator at historical average minus one standard deviation in 2018-2019	82	85	90	93	97	99	**106**	111
B4. Net non-debt creating flows at historical average minus one standard deviation in 2018-2019 4/	82	85	89	93	97	99	**104**	107
B5. Combination of B1-B4 using one-half standard deviation shocks	82	85	91	94	98	100	**107**	111
B6. One-time 30 percent nominal depreciation relative to the baseline in 2018 5/	82	117	120	125	130	133	**142**	149

Table 2. Nicaragua: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2017–37 (Concluded)

(In percent)

Debt service-to-exports ratio								
Baseline	4	4	4	4	4	5	**7**	8
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2017-2037 1/	4	4	4	4	4	5	**7**	8
A2. New public sector loans on less favorable terms in 2017-2037 2/	4	4	4	4	4	5	**6**	11
A3. Alternative Scenario: Contingent Liability Scenario	4	4	5	5	7	8	**9**	10
A4. Alternative Scenario: NICA Act/Venezuela	4	4	5	5	7	9	**11**	13
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2018-2019	4	4	4	4	4	5	**7**	8
B2. Export value growth at historical average minus one standard deviation in 2018-2019 3/	4	4	5	5	5	6	**8**	9
B3. US dollar GDP deflator at historical average minus one standard deviation in 2018-2019	4	4	4	4	4	5	**7**	8
B4. Net non-debt creating flows at historical average minus one standard deviation in 2018-2019 4/	4	4	4	4	4	5	**7**	8
B5. Combination of B1-B4 using one-half standard deviation shocks	4	4	4	4	4	5	**7**	8
B6. One-time 30 percent nominal depreciation relative to the baseline in 2018 5/	4	4	4	4	4	5	**7**	8
Debt service-to-revenue ratio								
Baseline	6	5	5	5	5	6	**9**	10
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2017-2037 1/	6	5	5	5	6	7	**9**	10
A2. New public sector loans on less favorable terms in 2017-2037 2/	6	5	5	5	5	6	**8**	15
A3. Alternative Scenario: Contingent Liability Scenario	6	5	7	7	9	10	**12**	13
A4. Alternative Scenario: NICA Act/Venezuela	6	5	6	7	9	11	**15**	17
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2018-2019	6	6	6	6	6	7	**9**	11
B2. Export value growth at historical average minus one standard deviation in 2018-2019 3/	6	5	6	6	6	7	**10**	11
B3. US dollar GDP deflator at historical average minus one standard deviation in 2018-2019	6	6	6	6	6	7	**9**	11
B4. Net non-debt creating flows at historical average minus one standard deviation in 2018-2019 4/	6	5	5	5	6	7	**9**	10
B5. Combination of B1-B4 using one-half standard deviation shocks	6	6	6	6	6	7	**9**	11
B6. One-time 30 percent nominal depreciation relative to the baseline in 2018 5/	6	8	8	7	8	9	**12**	15
Memorandum item:								
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	16	16	16	16	16	16	**16**	16

Sources: Country authorities; and staff estimates and projections.

1/ Variables include real GDP growth, growth of GDP deflator (in U.S. dollar terms), non-interest current account in percent of GDP, and non-debt creating flows.
2/ Assumes that the interest rate on new borrowing is by 2 percentage points higher than in the baseline., while grace and maturity periods are the same as in the
3/ Exports values are assumed to remain permanently at the lower level, but the current account as a share of GDP is assumed to return to its baseline level after the shock (implicitly assuming an offsetting adjustment in import levels).
4/ Includes official and private transfers and FDI.
5/ Depreciation is defined as percentage decline in dollar/local currency rate, such that it never exceeds 100 percent.
6/ Applies to all stress scenarios except for A2 (less favorable financing) in which the terms on all new financing are as specified in footnote 2.

Table 3. Nicaragua: Public Sector Debt Sustainability Framework—Baseline Scenario 2017–37

(In percent of GDP, unless otherwise indicated)

	Actual					Estimate	Projections								
	2014	2015	2016	Average [5/]	Standard Deviation [5/]	2017	2018	2019	2020	2021	2022	2017-22 Average	2027	2037	2023-37 Average
Public sector debt 1/	40.2	40.7	41.9			41.5	40.0	39.1	38.2	38.5	38.6		41.0	54.7	
of which: foreign-currency denominated	38.9	39.6	40.8			40.5	39.2	38.4	37.6	38.0	38.2		41.0	54.7	
Change in public sector debt	-2.1	0.5	1.1			-0.4	-1.5	-0.9	-0.9	0.3	0.1		0.6	2.0	
Identified debt-creating flows	-1.3	-0.6	0.9			0.1	-0.5	-0.7	-0.8	0.0	0.0		0.9	2.2	
Primary deficit	1.1	1.1	1.2	-0.1	1.2	1.1	1.1	0.9	0.9	1.6	1.5	1.2	2.1	2.9	2.3
Revenue and grants	26.6	27.4	28.8			28.8	28.8	28.7	28.5	28.3	28.2	28.6	28.2	28.1	28.2
of which: grants	1.1	1.1	0.9			0.9	0.9	0.8	0.8	0.6	0.6	0.8	0.6	0.6	0.6
Primary (noninterest) expenditure	27.7	28.6	30.1			29.9	30.0	29.7	29.4	29.8	29.8	29.8	30.3	31.0	30.5
Automatic debt dynamics	-2.3	-1.7	-0.4			-1.0	-1.6	-1.6	-1.7	-1.6	-1.5		-1.2	-0.6	
Contribution from interest rate/growth differential	-1.8	-1.2	-1.2			-1.5	-1.6	-1.6	-1.6	-1.6	-1.4		-1.2	-0.6	
of which: contribution from average real interest rate	0.2	0.6	0.6			0.4	0.1	0.1	0.1	0.1	0.2		0.6	1.6	
of which: contribution from real GDP growth	-1.9	-1.9	-1.8			-1.8	-1.7	-1.7	-1.7	-1.6	-1.7		-1.7	-2.3	
Contribution from real exchange rate depreciation	-0.5	-0.5	0.8			0.5	-0.1	0.0	-0.1	0.0	0.0		...	...	
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	
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 implicit or contingent liabilities	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 (specify, 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	
Residual, including asset changes	-0.8	1.1	0.3			-0.5	-1.0	-0.2	-0.1	0.3	0.0		-0.3	-0.2	
Other Sustainability Indicators															
PV of public sector debt	...	...	31.6			30.9	29.3	28.4	27.9	28.6	28.7		31.1	46.8	
of which: foreign-currency denominated	...	...	30.5			30.0	28.5	27.7	27.4	28.1	28.3		31.1	46.8	
of which: external	...	...	22.1			22.9	23.5	24.2	25.1	26.1	26.7		28.6	29.9	
PV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...	
Gross financing need 2/	6.0	5.8	5.1			5.8	4.7	3.8	3.4	3.8	3.8		5.0	9.7	
PV of public sector debt-to-revenue and grants ratio (in percent)	...	...	109.6			107.3	101.8	99.0	97.9	101.0	101.5		110.4	166.1	
PV of public sector debt-to-revenue ratio (in percent)	...	...	113.3			110.8	105.1	101.9	100.6	103.4	103.9		113.0	170.0	
of which: external 3/	...	...	79.3			82.1	84.4	86.8	90.4	94.5	96.6		103.7	108.9	
Debt service-to-revenue and grants ratio (in percent) 4/	9.2	9.6	6.8			10.9	10.0	9.3	8.2	7.8	8.0		10.5	24.1	
Debt service-to-revenue ratio (in percent) 4/	9.6	10.0	7.0			11.2	10.3	9.5	8.4	7.9	8.2		10.8	24.7	
Primary deficit that stabilizes the debt-to-GDP ratio	3.2	0.6	0.1			1.5	2.7	1.8	1.8	1.3	1.5		1.5	0.9	
Key macroeconomic and fiscal assumptions															
Real GDP growth (in percent)	4.8	4.9	4.7	4.2	2.8	4.5	4.3	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Average nominal interest rate on forex debt (in percent)	2.3	2.9	2.9	3.0	0.6	3.0	2.6	2.4	2.2	2.1	2.7	2.5	3.5	5.3	4.0
Average real interest rate on domestic debt (in percent)	-2.8	-2.0	1.3	-2.3	3.5	-0.4	-1.9	-1.5	-1.7	-1.6	-0.8	-1.3	-1.6	...	-1.6
Real exchange rate depreciation (in percent, + indicates depreciation	-1.4	-1.2	2.2	-1.0	2.9	1.2	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	8.4	7.5	4.1	7.9	3.6	5.9	7.4	7.1	7.3	7.2	7.2	7.0	7.1	7.1	7.1
Growth of real primary spending (deflated by GDP deflator, in percer	5.6	8.3	10.2	2.4	4.0	3.9	4.5	3.5	3.7	5.9	4.2	4.3	4.7	4.1	4.8
Grant element of new external borrowing (in percent)	...	...	...	...	...	34.2	33.6	33.0	25.3	24.6	26.9	29.6	19.0	14.2	...

Sources: Country authorities; and staff estimates and projections.

1/ Consolidated public sector

2/ 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.

3/ Revenues excluding grants.

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

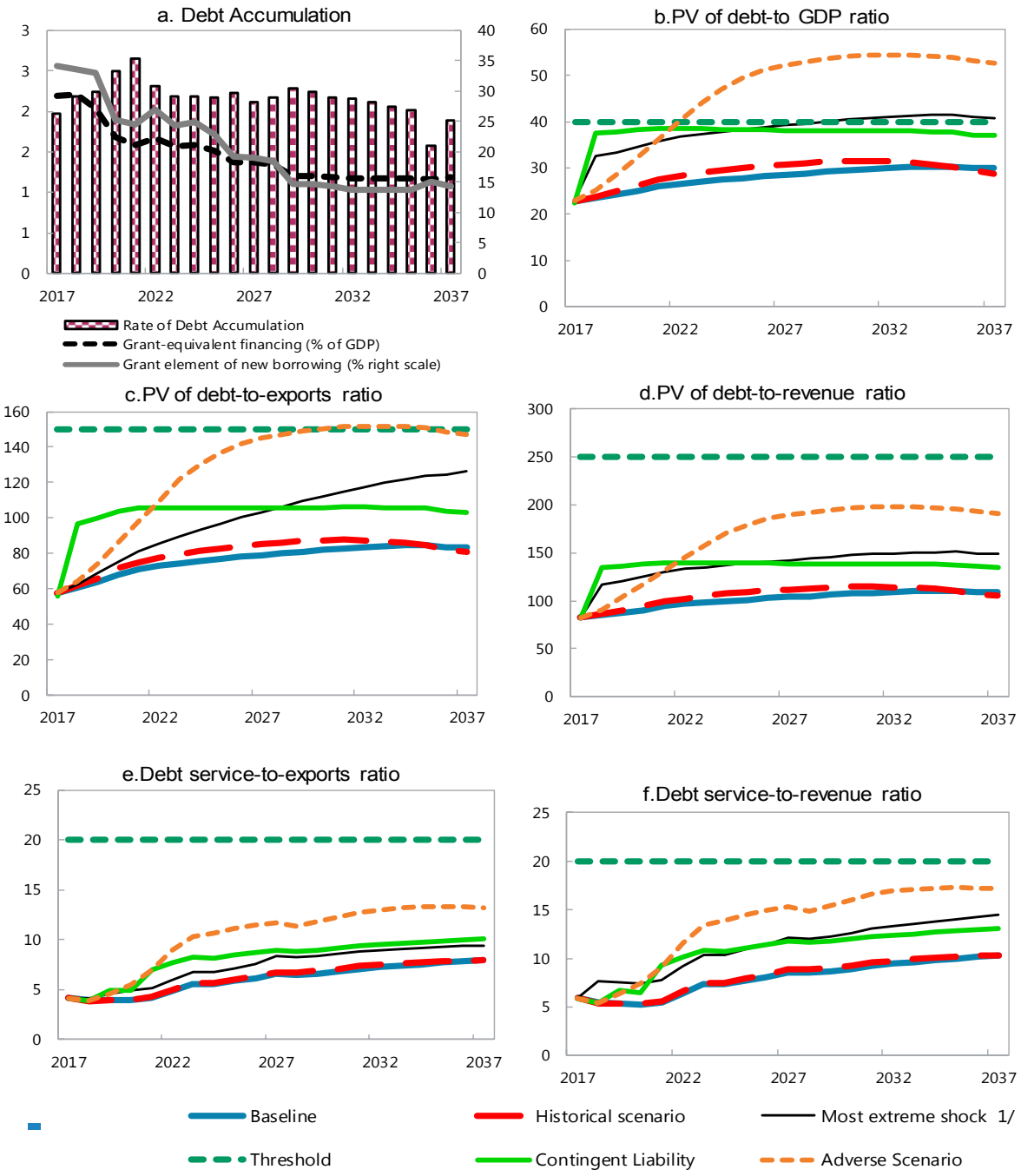
5/ Historical averages and standard deviations are generally derived over the past 10 years, subject to data availability.

Table 4. Nicaragua: Sensitivity Analysis for Key Indicators of Public Debt 2017–37

	Projections							
	2017	2018	2019	2020	2021	2022	2027	2037
PV of Debt-to-GDP Ratio								
Baseline	31	29	28	28	29	29	31	47
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	31	28	26	25	24	23	17	11
A2. Primary balance is unchanged from 2017	31	29	29	28	28	28	27	30
A3. Permanently lower GDP growth 1/	31	30	29	29	31	32	41	84
A4. Alternative Scenario : ALBA debt contingent liability	31	46	45	44	45	45	47	61
A5. Adverse Scenario	31	31	32	33	36	38	49	80
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2018-2019	31	31	33	34	36	37	47	76
B2. Primary balance is at historical average minus one standard deviations in 2018-2019	31	29	29	28	29	29	31	47
B3. Combination of B1-B2 using one half standard deviation shocks	31	29	28	29	30	31	38	61
B4. One-time 30 percent real depreciation in 2018	31	43	41	40	40	40	43	69
B5. 10 percent of GDP increase in other debt-creating flows in 2018	31	39	38	37	38	38	39	54
PV of Debt-to-Revenue Ratio 2/								
Baseline	107	102	99	98	101	101	110	166
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	107	98	92	88	86	81	60	40
A2. Primary balance is unchanged from 2017	107	102	99	99	100	99	95	106
A3. Permanently lower GDP growth 1/	107	103	102	103	109	113	147	298
A4. Alternative Scenario : ALBA debt contingent liability	107	160	156	154	158	159	167	217
A5. Adverse Scenario	107	107	111	116	126	134	173	285
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2018-2019	107	107	113	118	127	132	167	271
B2. Primary balance is at historical average minus one standard deviations in 2018-2019	107	102	99	98	101	102	111	166
B3. Combination of B1-B2 using one half standard deviation shocks	107	101	98	100	106	110	133	215
B4. One-time 30 percent real depreciation in 2018	107	148	143	141	143	142	153	244
B5. 10 percent of GDP increase in other debt-creating flows in 2018	107	135	133	131	134	134	140	191
Debt Service-to-Revenue Ratio 2/								
Baseline	11	10	9	8	8	8	10	24
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	11	10	9	5	4	2	-6	-14
A2. Primary balance is unchanged from 2017	11	10	9	8	8	8	6	6
A3. Permanently lower GDP growth 1/	11	10	9	9	9	10	20	60
A4. Alternative Scenario : ALBA debt contingent liability	11	10	11	9	11	12	14	28
A5. Adverse Scenario	11	10	10	9	9	10	16	38
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2018-2019	11	10	10	11	13	16	27	53
B2. Primary balance is at historical average minus one standard deviations in 2018-2019	11	10	9	8	8	8	11	24
B3. Combination of B1-B2 using one half standard deviation shocks	11	10	9	7	7	9	17	38
B4. One-time 30 percent real depreciation in 2018	11	12	12	13	13	15	24	53
B5. 10 percent of GDP increase in other debt-creating flows in 2018	11	10	13	34	13	27	17	31

Sources: Country authorities; and staff estimates and projections.
1/ Assumes that real GDP growth is at baseline minus one standard deviation divided by the square root of the length of the projection period.
2/ Revenues are defined inclusive of grants.

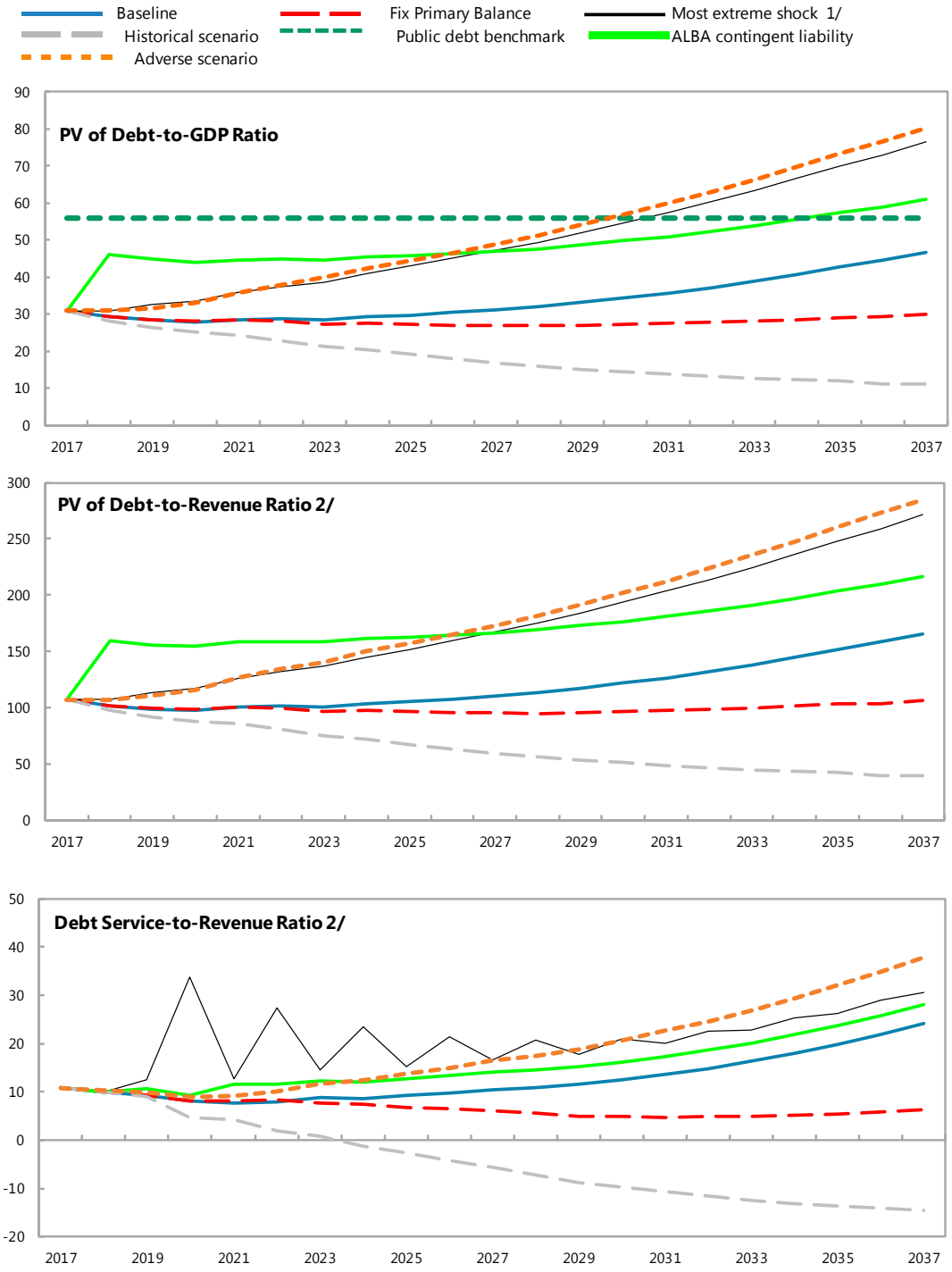
Figure 1. Nicaragua: Indicators of Public and Publicly Guaranteed External Debt under Alternative Scenarios, 2017–37 1/



Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio on or before 2027. In figure b. it corresponds to a One-time depreciation shock; in c. to a Terms shock; in d. to a One-time depreciation shock; in e. to a Exports shock and in figure f. to a One-time depreciation shock

Figure 2. Nicaragua: Indicators of Public Debt Under Alternative Scenarios, 2017–37 1/



Sources: Country authorities; and staff estimates and projections.
1/ The most extreme stress test is the test that yields the highest ratio on or before 2027.
2/ Revenues are defined inclusive of grants.