INTERNATIONAL MONETARY FUND

NICARAGUA

STAFF REPORT FOR THE 2015 ARTICLE IV CONSULTATION—DEBT SUSTAINABILITY ANALYSIS UPDATE

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

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

This debt sustainability analysis (DSA) updates the full DSA that was conducted in November 2013. Staff concludes that Nicaragua remains at moderate risk of debt distress, based on an assessment of public external debt, and that it faces a heightened overall risk of debt distress. On external debt, a customized contingent liability scenario and two of the standardized stress scenarios breach the threshold. Further, while lower oil prices have reduced the risk of debt distress, the magnitude of private external debt elevates Nicaragua's risk, as do questions about the continuation of external financing from Venezuela. On public debt, while macroeconomic management has been prudent, the fiscal position has become more expansionary and is expected to remain so over the medium term, worsening public debt dynamics. In addition, the outlook for the social security institute (INSS) has deteriorated and unless additional reforms are undertaken, this could pose a significant fiscal burden in the long term.[1]

[1] Based on its 2015 Country Policy and Institutional Assessment (CPIA) score of 3.73, Nicaragua remains classified as a medium performer.

A. Underlying Assumptions

1. **The key assumptions of this DSA are broadly in line with those of the 2013 DSA and in particular, growth is assumed to stabilize at its medium-term potential level of 4 percent.** As in the past, this analysis considers the consolidated public sector, which includes debt of the budgetary central government, decentralized entities, social security institute (INSS), the municipality of Managua, state-owned enterprises (SOEs), and the central bank.[1] This DSA also assumes (both in the historical and projection periods) that relief has been obtained on HIPC terms for all eligible debt where negotiations are still pending.[2]

However, differences are most notable in the following areas:

- **Official statistics:** Revisions to the national accounts and balance of payments data have resulted in lower projections for the current account deficit. On average, the current account deficit was revised down by 1.2 percent of GDP over the period 2010–14. Moreover, staff estimates of historical public debt stocks have been revised to consolidate intra-government debt and to include an estimation of the domestic debt stock of SOEs.

- **Current account:** Compared to the 2013 DSA, exports of goods and services are lower, owing to a substantial downward revision of many traditional export prices as well as lower estimated import volumes of Nicaragua's trading partners. Also, since the 2013 DSA oil price projections have been revised downwards, including over the medium to long term, and this has lowered import projections. The net effect has been a reduction in projected current account deficits. Future loan disbursements linked to the oil collaboration with Venezuela, which are recorded as private external debt, are also affected by the revised oil price assumptions.

- **External financing:** Assumptions about the availability and terms of new external financing from multilateral sources have changed, with a higher average real interest rate projected in the long term. In July 2015, Nicaragua was reclassified from an IDA-only to an IDA-gap country, which means that it is no longer subject to IDA's non-concessional borrowing policy and that the IDA terms are less concessional. Also, access to resources from Nicaragua's largest creditor, the Inter-American Development Bank, changed in 2015 from a 50–50 ratio of concessional resources to non-concessional resources to a 40–60 ratio. The trend of a declining grant element in new loans is expected to continue over the medium to long term. On the positive side, these developments should also increase the availability of external financing from official sources. External financing from concessional multilateral and bilateral sources is therefore assumed

[1] In spite of the comprehensive institutional coverage of the public sector, Nicaragua's debt statistics do not cover all domestic debt of state-owned enterprises. In particular, the public debt statistics used in this report differ slightly from the authorities' published numbers due to adjustments by staff to consolidate intra-government debt and to estimate the domestic debt stock of SOEs.

[2] At end-June 2015, outstanding debt subject to relief stood at US$1 billion, most of this on the books of the central bank. Since the 2013 DSA, additional debt relief has been obtained amounting to US$500 million. This DSA shows debt net of pending relief, including for the historical period.

constant at 3.5 percent of GDP from 2020 through 2035, with residual financing needs being met through domestic bond issuance.[3]

- **Fiscal policy:** Fiscal policy has become more expansionary since the 2013 DSA, and the fiscal anchor has shifted from the goal of a gradual declining debt-to-GDP ratio to maintaining an overall deficit of the consolidated public sector at about 2.5 percent of GDP. Over the medium term, fiscal policy is assumed to remain in line with current trends. This results in a higher primary deficit than what was assumed in the 2013 DSA (1.4 percent of GDP versus 0.3 percent in the 2015–20). In addition, the reserve fund of the INSS is projected to be depleted by 2024, following which it is assumed that the central government will transfer resources to INSS to help finance its deficit. This does not affect the CPS primary balance, as the transfers are between two government entities and thus consolidated out. Nevertheless, as the INSS fund is exhausted, these deficits will impact debt dynamics because the central government is required to issue bonds to finance transfers to INSS. The scenario assumes that the bonds are issued domestically, a more expensive source of financing. Securing the INSS's financial sustainability is therefore a key long-term challenge that needs to be tackled.

Key Macroeconomic Assumptions Underlying the DSA for the Baseline Scenario

	Current DSA		2013 DSA		Historical averages
	2015-2020	2021-2035	2013-2018	2019-2033	2005-2014
Real GDP growth (in percent)	4.0	4.0	4.0	4.0	3.8
GDP deflator in US$ terms (in percent)	1.3	2.1	2.1	1.5	3.6
Non-interest current account (in percent of GDP)	-6.8	-6.9	-9.1	-7.1	-8.2
FDI (in percent of GDP)	6.0	5.8	6.0	6.0	6.0
Primary balance (in percent of GDP)	-1.4	-1.4	-0.3	-0.1	0.3
Revenue and grants (in percent of GDP)	29.4	30.3	27.6	27.8	26.0
Primary expenditure (in percent of GDP)	30.8	31.7	27.9	27.7	25.7
Average real interest rate on public debt (percent)	1.3	2.3	1.1	0.9	0.5

B. External Debt Sustainability

2. **External debt as a ratio of GDP is expected to decline marginally over the projection period from 79 percent at end-2014 to 76 percent in 2035.** Private external debt-to-GDP is likely to continue to increase until the mid-2020s, but at a more gradual pace than has been observed ever since the Venezuela oil collaboration began in 2007; current projections for oil prices in effect imply that Venezuela inflows will be lower than anticipated at the time of the 2013 DSA.

3. **Under the baseline scenario, external public debt increases slightly from 33 percent at end-2014 to 36 percent in 2035.**[4] The present value of external public debt is projected to remain

[3] A joint Bank-Fund technical assistance project, in collaboration with CEMLA, is currently underway to assist the authorities in upgrading their debt management practices and developing the domestic debt market.

well below all the relevant thresholds in the baseline scenario. The historical scenario, which notably assumes a higher current account deficit than in the baseline (8.2 percent, based on the average non-interest current account balance over the past 10 years) results in a breach in the outer years. A change in the terms of external financing is also projected to result in a significant (and permanent) increase in the PPG external debt stock. Given that financing from official sources is typically at fixed interest rates, the risk of such a shock is low; nevertheless, this highlights the need for caution in considering external borrowing at market rates.[5]

4. **The rapid increase in private external debt, which includes the debt arising as a result of the oil collaboration with Venezuela, requires continuous monitoring.** While the government has stressed that it is their policy not to extend public guarantees on this debt, this DSA (as was the case in the 2013 DSA) includes a scenario whereby the government of Nicaragua absorbs about 60 percent of private external debt[6] onto its balance sheet. This results in a breach of the PV of PPG external debt-to-GDP+remittances threshold of 36 percent, with the ratio increasing to 38 percent in 2016 (compared to 23 percent in the baseline).[7] While the nominal amount of the additional debt is large (about US$3.2 billion or 25½ percent of GDP), the concessional terms in the debt with Venezuela imply less of an impact in present value terms.

C. Public Debt

5. **Public debt-to-GDP has decreased slightly since the 2013 DSA, standing at 40.8 percent at end-2014.** Under the baseline scenario, public debt-to-GDP is projected to stabilize at around 41 percent by 2020, or 30 percent in present value terms, comfortably below the 56 percent benchmark. However, in the absence of further policy actions to enhance INSS's sustainability, the INSS fund is projected to be fully depleted by 2024.[8] If this materializes, the central government will need to transfer resources to INSS to help cover its obligations, as reflected in the baseline of this DSA update report (from 32 percent of GDP in PV terms in 2015 to 48 percent in 2035). Of all the standardized stress scenarios, a shock to real GDP growth in 2016–17—where growth falls to 1.3 percent in these two years—will result in the least favorable outcome for all indicators. The unchanged primary balance scenario is also worth noting as it highlights the need for

[4] As in the 2013 DSA, remittances are included in denominator of the baseline and standardized stress scenarios. Over the past 3 years, remittances have averaged 10 percent of GDP and 22 percent of exports of goods and services, which is on the borderline of the Fund's thresholds for taking them in to account in the DSA. However, excluding remittances has little impact on this assessment.

[5] The DSA considers, among other shocks, a scenario where key variables are set at 10-year historical averages, and a two percentage point increase in the interest rate over the period of the analysis

[6] This private debt includes the obligations of ALBANISA and CARUNA; the former is a limited liability entity jointly owned by PDVSA and PETRONIC and the latter is a private financial cooperative. The authorities have informed staff that the credit risk on the oil collaboration debt is borne exclusively by PDVSA.

[7] It is assumed that the same concessional terms would apply to this new debt (specifically, 2 percent interest rate, 2 years grace period, 25 year maturity and a 5 percent discount rate), and that the government will not absorb any additional debt generated from future oil imports.

[8] This assessment is sensitive to assumptions about future growth in coverage, real wages, and healthcare costs.

fiscal consolidation—if the fiscal policy stance of 2015 is maintained over the long term, public debt will come close to breaching the benchmark in 2035.

6. **The contingent liability scenario described above in the external DSA is also applied to the public DSA.** The PV of public debt to GDP would increase to 50 percent of GDP in 2016 compared to 32 percent in the baseline scenario. This scenario would eventually exceed the benchmark over the longer term. Not considered in this DSA update is the risk that a deterioration in the financial conditions or levels of the Venezuela oil cooperation could lead to certain projects currently financed by CARUNA being absorbed by the budget. Staff estimates that these projects could amount to about 1 percent of GDP. This risk is one of the factors motivating staff's recommendation to build fiscal buffers beginning in 2017 and also contributes to the staff's assessment that Nicaragua is at a heightened risk of overall debt distress.

D. Conclusion

7. **The staff considers that Nicaragua remains at a moderate risk of external debt distress**. The concessional nature of most of the government's external borrowing and their track record of relatively prudent macroeconomic management results in a manageable baseline scenario. However, the customized scenario and two of the standardized stress scenarios breach the external PPG debt threshold in present value terms. Staff also considers Nicaragua to be at a heightened risk of overall debt distress, given the magnitude of private external debt, the quasi-fiscal nature of some of this debt, and the likelihood that some projects currently financed by Venezuela resources might end up being absorbed by the budget. Moreover, public debt dynamics have worsened since the previous DSA due to a more expansionary fiscal policy, and debt could become unsustainable in the event that no additional action is taken to improve the INSS finances.

8. **The authorities broadly concurred with the findings of the analysis, but noted some important differences with their own debt sustainability analysis.** First, the authorities' growth assumptions are more positive, with an average of 4.7 percent over the 2015–19 period and 5 percent thereafter, consistent with their expectation that stepped-up investment in infrastructure will shift the growth path. Second, the authorities' fiscal balance projections are more optimistic than staff's, owing in particular to higher revenue assumptions. Finally, while the authorities acknowledge that INSS will need reform to ensure its long-term sustainability, they do not include any central government transfers to INSS in their analysis, assuming that additional reforms will be undertaken before any such transfers are required. The authorities reiterated that the debt owed by ALBANISA and CARUNA to PDVSA is private and staff welcomes that the government's policy is neither to absorb nor to extend public guarantees on this debt. They also highlighted the significant progress made on achieving debt relief from non-Paris Club creditors during 2014 and 2015.

Table 1. Nicaragua: External Debt Sustainability Framework, Baseline Scenario, 2012–35 1/

(Percent of GDP unless otherwise indicated)

	Actual			Historical 6/ Average	Standard 6/ Deviation	Projections									
	2012	2013	2014			2015	2016	2017	2018	2019	2020	2015-2020 Average	2025	2035	2021-2035 Average
External debt (nominal) 1/	**77.6**	**81.8**	**78.6**			**82.0**	**83.3**	**84.8**	**86.3**	**87.4**	**88.3**		**88.3**	**76.0**	
of which: public and publicly guaranteed (PPG)	32.8	33.6	32.5			34.0	34.5	35.1	35.8	36.2	36.3		36.9	36.2	
Change in external debt	4.3	4.2	-3.1			3.3	1.3	1.5	1.5	1.1	0.8		-0.5	-1.5	
Identified net debt-creating flows	-1.1	1.8	-5.9			-1.5	-1.3	-0.7	-0.7	-0.6	-0.7		-0.7	-0.4	
Non-interest current account deficit	**9.1**	**9.5**	**5.5**	**8.2**	**1.9**	**6.2**	**6.6**	**7.1**	**7.0**	**6.8**	**6.9**	6.8	**6.9**	**6.9**	6.9
Deficit in balance of goods and services	20.1	20.8	16.7			17.4	17.5	17.8	17.6	17.4	17.2		17.2	17.2	
Exports	45.3	42.5	42.4			40.0	38.7	38.1	37.8	37.2	36.5		36.5	36.5	
Imports	65.4	63.3	59.2			57.4	56.2	55.9	55.5	54.7	53.8		53.8	53.8	
Net current transfers (negative = inflow)	-12.5	-12.6	-12.2	-13.3	0.8	-12.3	-12.2	-12.0	-11.9	-11.7	-11.5		-11.5	-11.5	-11.5
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	
Other current account flows (negative = net inflow)	1.5	1.3	1.0			1.2	1.3	1.3	1.2	1.1	1.2		1.2	1.2	
Net FDI (negative = inflow)	**-6.8**	**-6.5**	**-6.4**	**-6.0**	**1.7**	**-6.4**	**-6.2**	**-6.1**	**-5.9**	**-5.7**	**-5.8**	-6.0	**-5.8**	**-5.8**	-5.8
Endogenous debt dynamics 2/	**-3.4**	**-1.2**	**-5.0**			**-1.2**	**-1.7**	**-1.6**	**-1.8**	**-1.7**	**-1.7**		**-1.8**	**-1.4**	
Contribution from nominal interest rate	1.6	1.6	1.6			1.8	1.6	1.5	1.4	1.6	1.6		1.5	1.5	
Contribution from real GDP growth	-3.5	-3.4	-3.5			-3.1	-3.3	-3.1	-3.2	-3.2	-3.3		-3.3	-2.9	
Contribution from price and exchange rate changes	-1.4	0.6	-3.1			...	...	...	...	...	...		...	...	
Residual (3-4) 3/	**5.4**	**2.5**	**2.8**			**4.8**	**2.6**	**2.2**	**2.2**	**1.7**	**1.5**		**0.2**	**-1.1**	
of which: exceptional financing	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/	...	...	68.3			71.5	73.0	74.4	75.8	76.6	77.2		76.5	67.0	
In percent of exports	...	...	160.9			178.9	188.7	195.4	200.3	205.9	211.2		209.4	183.5	
PV of PPG external debt	**...**	**...**	**22.2**			**23.6**	**24.1**	**24.7**	**25.3**	**25.4**	**25.2**		**25.1**	**27.2**	
In percent of exports	**...**	**...**	**52.3**			**59.0**	**62.4**	**64.9**	**66.9**	**68.1**	**69.0**		**68.7**	**74.5**	
In percent of government revenues	**...**	**...**	**86.0**			**85.5**	**85.9**	**87.6**	**88.9**	**88.7**	**87.7**		**86.2**	**92.2**	
Debt service-to-exports ratio (in percent)	**13.0**	**13.5**	**14.4**			**16.6**	**17.4**	**17.9**	**18.2**	**19.2**	**19.6**		**20.1**	**18.1**	
PPG debt service-to-exports ratio (in percent)	**2.1**	**2.1**	**2.4**			**3.5**	**4.2**	**4.6**	**5.0**	**5.7**	**5.9**		**6.5**	**7.7**	
PPG debt service-to-revenue ratio (in percent)	**3.7**	**3.4**	**4.0**			**5.1**	**5.8**	**6.3**	**6.7**	**7.4**	**7.5**		**8.1**	**9.6**	
Total gross financing need (Millions of U.S. dollars)	1324	1559	1163			1332	1562	1707	1841	1977	2108		2679	3876	
Non-interest current account deficit that stabilizes debt ratio	4.8	5.3	8.6			2.9	5.3	5.5	5.5	5.7	6.0		7.4	8.4	
Key macroeconomic assumptions															
Real GDP growth (in percent)	5.1	4.5	4.7	3.8	2.5	4.0	4.2	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
GDP deflator in US dollar terms (change in percent)	2.0	-0.7	3.9	3.6	3.1	-1.4	1.1	1.8	2.1	2.3	2.3	1.3	2.1	2.1	2.1
Effective interest rate (percent) 5/	2.3	2.1	2.2	2.1	0.2	2.4	2.1	1.9	1.8	2.0	1.9	2.0	1.8	2.1	1.9
Growth of exports of G&S (US dollar terms, in percent)	13.6	-2.5	8.5	15.8	13.5	-3.4	1.9	4.2	5.5	4.6	4.4	2.9	6.1	6.1	6.1
Growth of imports of G&S (US dollar terms, in percent)	8.4	0.5	1.6	11.9	13.5	-0.6	3.3	5.3	5.3	4.8	4.6	3.8	6.1	6.1	6.1
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	30.8	30.4	31.2	28.4	32.3	34.2	31.2	22.9	3.0	17.1
Government revenues (excluding grants, in percent of GDP)	25.6	25.9	25.8			27.6	28.1	28.2	28.5	28.6	28.7		29.1	29.5	29.3
Aid flows (in Millions of US dollars) 7/	216	180	132			286	322	336	315	345	371		406	395	
of which: Grants	216	180	132			148	160	145	135	150	161		217	395	
of which: Concessional loans	...	...	...			138	162	191	180	196	209		189	0	
Grant-equivalent financing (in percent of GDP) 8/	...	...	...			2.2	2.2	2.2	2.0	2.2	2.2		1.8	1.1	1.6
Grant-equivalent financing (in percent of external financing) 8/	...	...	...			50.6	50.2	46.9	42.6	46.6	48.9		40.1	24.7	35.6
Memorandum items:															
Nominal GDP (Millions of US dollars)	10460	10851	11806			12102	12754	13497	14327	15238	16207		21842	39672	
Nominal dollar GDP growth	7.2	3.7	8.8			2.5	5.4	5.8	6.1	6.4	6.4	5.4	6.1	6.1	6.1
PV of PPG external debt (in Millions of US dollars)			2557			2786	3003	3254	3538	3772	3987		5346	10537	
(PVt-PVt-1)/GDPt-1 (in percent)						1.9	1.8	2.0	2.1	1.6	1.4	1.8	1.6	1.9	1.7
Gross workers' remittances (Millions of US dollars)	1014	1078	1136			1174	1221	1274	1332	1390	1447		1950	3542	
PV of PPG external debt (in percent of GDP + remittances)	...	...	20.2			21.5	22.0	22.6	23.2	23.2	23.1		23.0	25.0	
PV of PPG external debt (in percent of exports + remittances)	...	...	42.6			47.5	50.0	52.0	53.7	54.7	55.4		55.2	59.9	
Debt service of PPG external debt (in percent of exports + remittanc	...	...	2.0			2.8	3.4	3.7	4.0	4.6	4.7		5.2	6.2	

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.

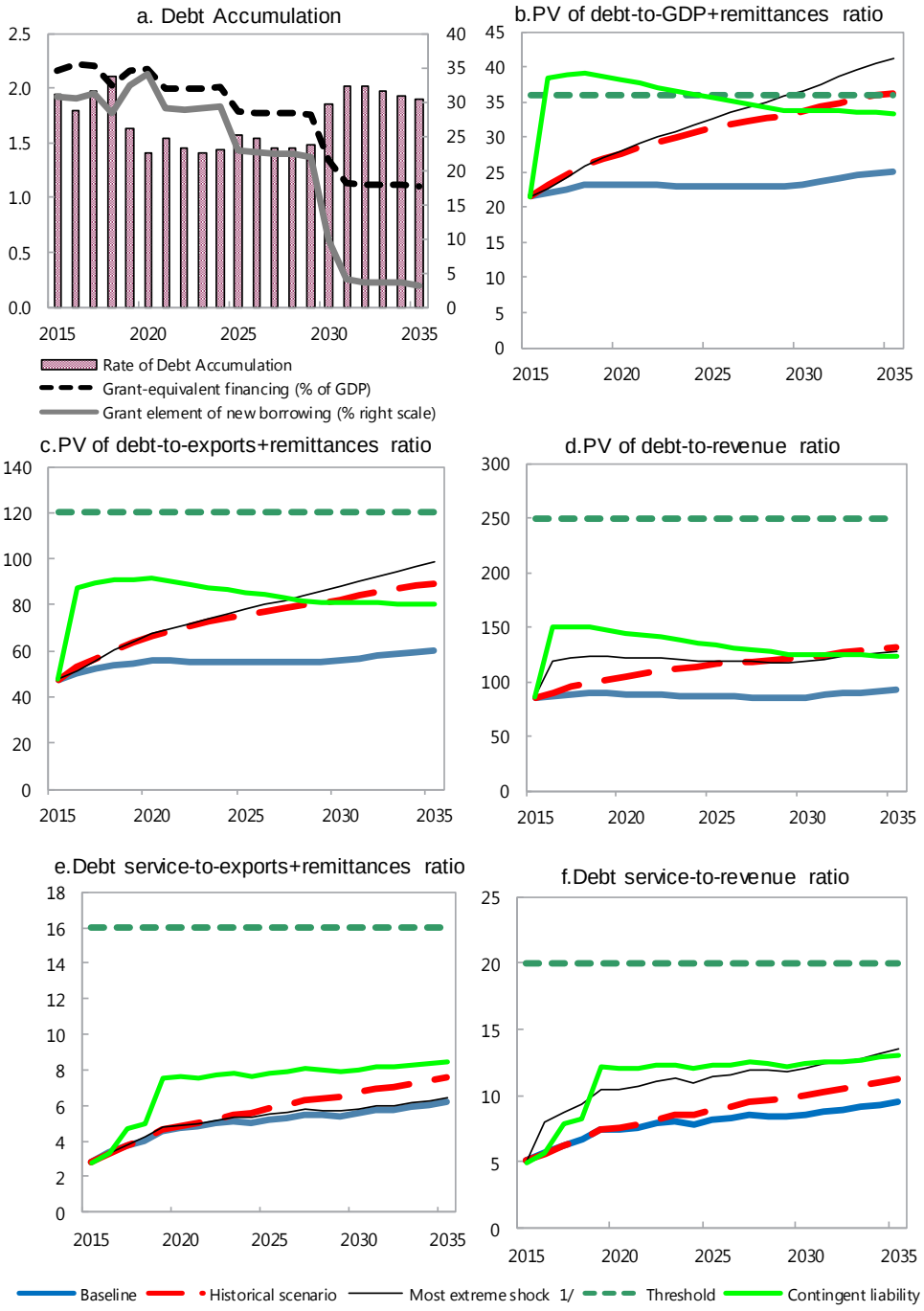
5/ Current-year interest payments divided by previous period debt stock.

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).

Figure 1. Nicaragua: Indicators of Public and Publicly Guaranteed External Debt Under Alternative Scenarios, 2015–35 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 2025. In figure b. it corresponds to a Terms shock; in c. to a Terms shock; in d. to a One-time depreciation shock; in e. to a Non-debt flows shock and in figure f. to a One-time depreciation shock

Table 2. Nicaragua: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2015–35

(In percent)

	Projections							
	2015	2016	2017	2018	2019	2020	**2025**	2035
PV of debt-to-GDP+remittances ratio								
Baseline	22	22	23	23	23	23	**23**	25
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2015-2035 1/	22	23	24	26	27	28	**31**	36
A2. New public sector loans on less favorable terms in 2015-2035 2	22	23	24	26	27	28	**33**	41
A3. Contingent liability scenario	22	38	39	39	39	38	**36**	33
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2016-2017	22	22	23	24	24	24	**24**	25
B2. Export value growth at historical average minus one standard deviation in 2016-2017 3/	22	21	22	23	23	23	**23**	24
B3. US dollar GDP deflator at historical average minus one standard deviation in 2016-2017	22	22	22	23	23	23	**23**	25
B4. Net non-debt creating flows at historical average minus one standard deviation in 2016-2017 4/	22	23	24	25	25	25	**24**	25
B5. Combination of B1-B4 using one-half standard deviation shocks	22	20	17	18	18	18	**19**	23
B6. One-time 30 percent nominal depreciation relative to the baseline in 2016 5/	22	29	30	31	31	31	**31**	33
PV of debt-to-exports+remittances ratio								
Baseline	47	50	52	54	55	55	**55**	60
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2015-2035 1/	47	53	57	60	64	67	**76**	89
A2. New public sector loans on less favorable terms in 2015-2035 2	47	51	56	60	64	67	**78**	99
A3. Contingent liability scenario	47	87	89	91	91	91	**85**	80
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2016-2017	47	49	51	52	53	54	**54**	58
B2. Export value growth at historical average minus one standard deviation in 2016-2017 3/	47	48	52	54	55	55	**55**	59
B3. US dollar GDP deflator at historical average minus one standard deviation in 2016-2017	47	49	51	52	53	54	**54**	58
B4. Net non-debt creating flows at historical average minus one standard deviation in 2016-2017 4/	47	51	56	58	59	59	**58**	60
B5. Combination of B1-B4 using one-half standard deviation shocks	47	42	35	37	38	39	**40**	48
B6. One-time 30 percent nominal depreciation relative to the baseline in 2016 5/	47	49	51	52	53	54	**54**	58
PV of debt-to-revenue ratio								
Baseline	85	86	88	89	89	88	**86**	92
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2015-2035 1/	85	90	95	99	102	104	**116**	131
A2. New public sector loans on less favorable terms in 2015-2035 2	85	88	94	100	103	106	**122**	152
A3. Contingent liability scenario	85	150	150	150	148	144	**133**	123
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2016-2017	85	86	90	92	91	90	**89**	94
B2. Export value growth at historical average minus one standard deviation in 2016-2017 3/	85	83	87	88	87	86	**85**	90
B3. US dollar GDP deflator at historical average minus one standard deviation in 2016-2017	85	84	87	88	88	87	**85**	91
B4. Net non-debt creating flows at historical average minus one standard deviation in 2016-2017 4/	85	89	95	95	95	94	**91**	93
B5. Combination of B1-B4 using one-half standard deviation shocks	85	77	67	69	69	69	**70**	84
B6. One-time 30 percent nominal depreciation relative to the baseline in 2016 5/	85	119	121	123	123	121	**119**	127

Table 2. Nicaragua: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2015–35 (Concluded)

Debt service-to-exports+remittances ratio								
Baseline	3	3	4	4	5	5	**5**	6
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2015-2035 1/	3	3	4	4	5	5	**6**	8
A2. New public sector loans on less favorable terms in 2015-2035 2	3	3	3	3	4	4	**5**	9
A3. Contingent liability scenario	3	3	5	5	8	8	**8**	8
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2016-2017	3	3	4	4	5	5	**5**	6
B2. Export value growth at historical average minus one standard deviation in 2016-2017 3/	3	3	4	4	5	5	**5**	6
B3. US dollar GDP deflator at historical average minus one standard deviation in 2016-2017	3	3	4	4	5	5	**5**	6
B4. Net non-debt creating flows at historical average minus one standard deviation in 2016-2017 4/	3	3	4	4	5	5	**6**	6
B5. Combination of B1-B4 using one-half standard deviation shocks	3	3	3	3	4	4	**4**	5
B6. One-time 30 percent nominal depreciation relative to the baseline in 2016 5/	3	3	4	4	5	5	**5**	6
Debt service-to-revenue ratio								
Baseline	5	6	6	7	7	7	**8**	10
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2015-2035 1/	5	6	6	7	7	8	**9**	11
A2. New public sector loans on less favorable terms in 2015-2035 2	5	6	5	6	7	7	**8**	15
A3. Contingent liability scenario	5	6	8	8	12	12	**12**	13
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2016-2017	5	6	7	7	8	8	**8**	10
B2. Export value growth at historical average minus one standard deviation in 2016-2017 3/	5	6	6	7	7	7	**8**	10
B3. US dollar GDP deflator at historical average minus one standard deviation in 2016-2017	5	6	6	7	7	7	**8**	10
B4. Net non-debt creating flows at historical average minus one standard deviation in 2016-2017 4/	5	6	6	7	8	8	**9**	10
B5. Combination of B1-B4 using one-half standard deviation shocks	5	6	6	6	7	7	**7**	9
B6. One-time 30 percent nominal depreciation relative to the baseline in 2016 5/	5	8	9	9	10	10	**11**	13
Memorandum item:								
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	13	13	13	13	13	13	**13**	13

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 baseline.
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, 2012–35

(Percent of GDP, unless otherwise indicated)

	Actual					Estimate	Projections								
	2012	2013	2014	Average 5/	Standard Deviation 5/	2015	2016	2017	2018	2019	2020	2015-20 Average	2025	2035	2021-35 Average
Public sector debt 1/	41.9	43.0	40.8			42.6	41.9	41.8	41.5	41.0	40.8		42.6	56.7	
of which: foreign-currency denominated	40.2	41.4	39.5			41.4	40.8	40.8	40.7	40.3	40.2		42.4	56.8	
Change in public sector debt	-1.3	1.1	-2.2			1.8	-0.8	-0.1	-0.2	-0.5	-0.2		0.8	1.9	
Identified debt-creating flows	-2.2	-0.2	-1.6			1.6	0.3	0.4	0.2	0.0	0.3		0.6	1.4	
Primary deficit	-0.4	0.2	0.9	-0.3	1.5	1.5	1.4	1.6	1.5	1.2	1.4	1.4	1.5	1.4	1.4
Revenue and grants	27.7	27.6	26.9			28.8	29.4	29.3	29.4	29.6	29.7	29.4	30.1	30.5	30.3
of which: grants	2.1	1.7	1.1			1.2	1.3	1.1	0.9	1.0	1.0		1.0	1.0	
Primary (noninterest) expenditure	27.3	27.8	27.8			30.3	30.7	30.8	30.9	30.7	31.1	30.8	31.5	31.9	31.8
Automatic debt dynamics	-1.8	-0.4	-2.4			0.1	-1.1	-1.2	-1.3	-1.2	-1.1		-0.9	0.0	
Contribution from interest rate/growth differential	-1.7	-1.4	-1.6			-0.8	-1.1	-1.2	-1.2	-1.1	-1.0		-0.9	0.0	
of which: contribution from average real interest rate	0.4	0.4	0.4			0.7	0.6	0.4	0.4	0.5	0.5		0.7	2.1	
of which: contribution from real GDP growth	-2.1	-1.8	-1.9			-1.6	-1.7	-1.6	-1.6	-1.6	-1.6		-1.6	-2.1	
Contribution from real exchange rate depreciation	-0.1	0.9	-0.9			0.9	0.0	0.0	0.0	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	1.3	-0.6			0.2	-1.0	-0.5	-0.4	-0.5	-0.4		0.2	0.5	
Other Sustainability Indicators															
PV of public sector debt	...	...	30.5			32.2	31.5	31.3	31.0	30.2	29.7		30.8	47.7	
of which: foreign-currency denominated	...	...	29.1			30.9	30.4	30.4	30.2	29.5	29.1		30.6	47.8	
of which: external	...	...	22.2			23.6	24.1	24.7	25.3	25.4	25.2		25.1	27.2	
PV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...	
Gross financing need 2/	7.6	6.9	7.9			6.4	5.9	5.7	5.5	5.0	5.4		5.0	8.7	
PV of public sector debt-to-revenue and grants ratio (in percent)	...	...	113.3			111.7	107.4	107.0	105.5	102.2	100.0		102.5	156.5	
PV of public sector debt-to-revenue ratio (in percent)	...	...	118.2			116.7	112.2	111.1	109.0	105.7	103.5		106.0	161.8	
of which: external 3/	...	...	86.0			85.5	85.9	87.6	88.9	88.7	87.7		86.2	92.2	
Debt service-to-revenue and grants ratio (in percent) 4/	19.7	15.2	16.6			9.5	9.9	9.9	10.0	10.3	10.6		12.2	26.0	
Debt service-to-revenue ratio (in percent) 4/	21.3	16.2	17.3			9.9	10.4	10.2	10.3	10.7	11.0		12.7	26.9	
Primary deficit that stabilizes the debt-to-GDP ratio	1.0	-0.9	3.0			-0.3	2.1	1.7	1.7	1.7	1.5	1.4	0.7	-0.5	0.2
Key macroeconomic and fiscal assumptions															
Real GDP growth (in percent)	5.1	4.5	4.7	3.8	2.5	4.0	4.2	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Average nominal interest rate on forex debt (in percent)	3.0	2.7	2.7	2.8	0.7	2.9	2.7	2.8	3.0	3.4	3.6	3.1	3.9	6.2	4.7
Average real interest rate on domestic debt (in percent)	-1.7	1.1	-3.5	-3.4	3.4	0.8	2.0	1.2	1.1	2.1	-1.9	0.9	-1.7	-1.7	-1.7
Real exchange rate depreciation (in percent, + indicates depreciation	-0.2	2.4	-2.2	-1.4	2.7	2.5	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	7.1	4.2	9.1	8.7	3.3	3.5	6.1	6.8	7.2	7.4	7.4	6.4	7.2	7.2	7.2
Growth of real primary spending (deflated by GDP deflator, in percer	8.9	6.5	4.8	2.1	3.4	13.5	5.6	4.4	4.2	3.5	5.1	6.0	4.4	4.0	4.2
Grant element of new external borrowing (in percent)	...	...	...	...	...	30.8	30.4	31.2	28.4	32.3	34.2	31.2	22.9	3.0	...

Sources: Country authorities; and staff estimates and projections.

1/ [Indicate coverage of public sector, e.g., general government or nonfinancial public sector. Also whether net or gross debt is used.]

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.

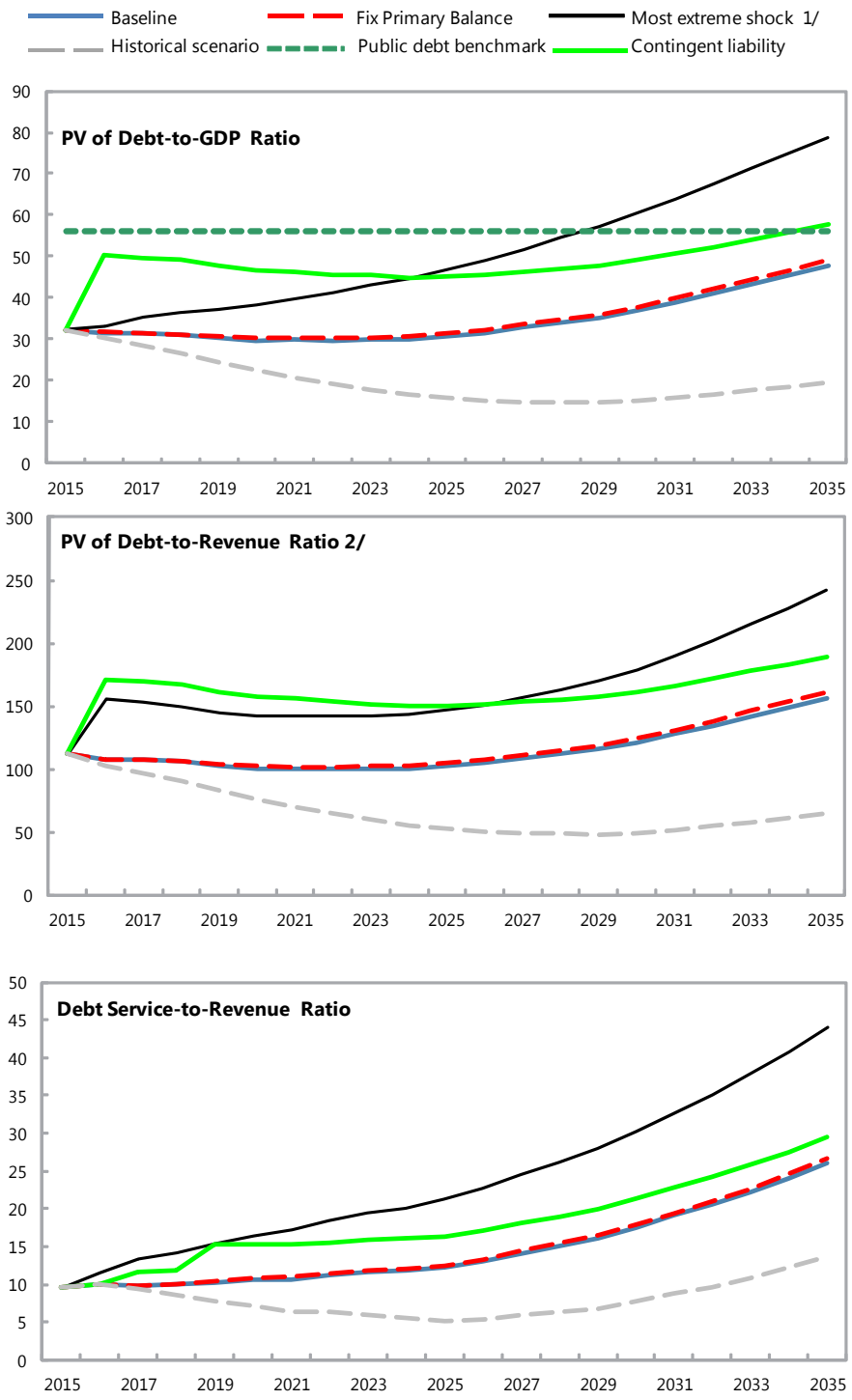
5/ Historical averages and standard deviations are generally derived over the past 10 years, subject to data availability.

Table 4. Nicaragua: Sensitivity Analysis for Key Indicators of Public Debt, 2015–35

	Projections							
	2015	2016	2017	2018	2019	2020	2025	2035
PV of Debt-to-GDP Ratio								
Baseline	32	32	31	31	30	30	31	48
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	32	30	28	27	24	22	16	20
A2. Primary balance is unchanged from 2015	32	32	31	31	31	30	31	49
A3. Permanently lower GDP growth 1/	32	32	32	32	32	33	40	84
A4. Contingent liability scenario	32	50	50	49	48	47	45	58
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2016-2017	32	33	35	37	37	38	47	79
B2. Primary balance is at historical average minus one standard deviations in 2016-2017	32	31	31	31	30	29	30	47
B3. Combination of B1-B2 using one half standard deviation shocks	32	31	30	31	31	31	37	62
B4. One-time 30 percent real depreciation in 2016	32	46	45	44	43	42	44	74
B5. 10 percent of GDP increase in other debt-creating flows in 2016	32	41	41	40	39	39	40	56
PV of Debt-to-Revenue Ratio 2/								
Baseline	112	108	107	106	102	100	103	157
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	112	103	97	90	82	76	53	65
A2. Primary balance is unchanged from 2015	112	108	107	106	104	102	105	161
A3. Permanently lower GDP growth 1/	112	109	110	110	109	110	134	274
A4. Contingent liability scenario	112	171	170	167	162	157	151	190
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2016-2017	112	113	121	124	126	129	155	257
B2. Primary balance is at historical average minus one standard deviations in 2016-2017	112	107	106	104	101	99	101	156
B3. Combination of B1-B2 using one half standard deviation shocks	112	106	104	105	105	105	122	204
B4. One-time 30 percent real depreciation in 2016	112	156	153	150	145	142	147	242
B5. 10 percent of GDP increase in other debt-creating flows in 2016	112	139	139	137	134	131	132	182
Debt Service-to-Revenue Ratio 2/								
Baseline	10	10	10	10	10	11	12	26
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	10	10	9	9	8	7	5	14
A2. Primary balance is unchanged from 2015	10	10	10	10	10	11	12	27
A3. Permanently lower GDP growth 1/	10	10	10	10	11	12	16	42
A4. Contingent liability scenario	10	10	12	12	15	15	16	29
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2016-2017	10	10	11	12	13	14	19	40
B2. Primary balance is at historical average minus one standard deviations in 2016-2017	10	10	10	10	10	10	12	26
B3. Combination of B1-B2 using one half standard deviation shocks	10	10	10	9	10	11	15	33
B4. One-time 30 percent real depreciation in 2016	10	12	13	14	15	16	21	44
B5. 10 percent of GDP increase in other debt-creating flows in 2016	10	10	13	16	16	17	16	29

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 2. Nicaragua: Indicators of Public Debt Under Alternative Scenarios, 2015–35 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 2025.
This corresponds to a shock to real GDP growth of one std. dev. in 2016-2020 for the top two charts and a real depreciation of the exchange rate of 30 percent in 2016 for the bottom chart.
2/ Revenues are defined inclusive of grants.