

INTERNATIONAL MONETARY FUND

NEPAL

Joint IMF/World Bank Debt Sustainability Analysis

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Public debt dynamics are assessed using the Low-Income Country Debt Sustainability Analysis (LIC-DSA) framework, which was jointly prepared by the IMF and the World Bank. The baseline macroeconomic scenario is broadly the same as in the previous DSA. The initial net present value of debt has improved compared to the previous DSA due to the appreciation of the Nepalese rupee and lower than projected loan disbursements in the interim. In view of the improved debt indicators, Nepal's external debt dynamics are assessed to be subject to a moderate risk of debt distress. This is a change from the previous DSA, which classified Nepal as at high risk of debt distress.

A. Recent Debt Developments

1. **Nepal's public debt stock is estimated at 47 percent of GDP in 2007 (in nominal terms).** Public external debt is estimated at US\$3.2 billion (33 percent of GDP) of which about US\$3 billion was owed to multilateral institutions, mostly IDA and the AsDB. Bilateral debt stock is estimated at about US\$270 million, with Japan as the largest creditor accounting for more than half of the bilateral debt. After remaining fairly constant at around 50 percent of GDP since 1995, the external debt stock dropped by about 17 percent during 2004-2007 as a result of relatively low external loan disbursements and the appreciation of the Nepalese rupee. The domestic debt stock accounts for around 14 percent of GDP and constitutes an increasing share of total public debt.

B. Assumptions

2. **Baseline projections of public and publicly guaranteed (PPG) debt are based on the following key assumptions:**

- **Real sector:** Real GDP growth is projected to rise gradually from 3.8 percent in 2007/08 as the peace process takes hold and stabilize at 5½ percent after 2010/11, in line with growth rates observed in the 1990s—a period of relative stability—and supported by structural reforms and sound macroeconomic policies. In the longer

term, Nepal's vast untapped hydropower potential is expected to contribute significantly to growth. The exchange rate is projected to depreciate against the dollar, in line with projected movements in the Indian rupee to which the Nepalese rupee is pegged. Inflation is assumed to decline from around 6.5 percent in 2007/08 to an average of about 5 percent in the medium term in line with projected inflation developments in India and as supply bottlenecks are gradually alleviated.

- **Fiscal sector:** The revenue-to-GDP ratio is projected at 13½ percent in 2007/08 and projected to average 14.3 percent in 2014-28 owing to gradual improvements in revenue mobilization. The expenditure-to-GDP ratio is projected around 19½ percent in 2007/08 and assumed to be maintained at this level thereafter.¹ Official grants are assumed to average 3 percent of GDP in 2007/08–2012/13 as donors are expected to support the peace process; from 2013/14 onwards official grants are projected to decline as a share of GDP.
- **External sector:** Exports of goods and services are projected to grow at an average of about 8 percent over the projection period, supported by tourism and growth in partner countries. Imports of goods and services (in dollar terms) are expected to grow by an average of 11 percent in the medium term, fuelled by remittances and in line with economic activity. Import growth during 2013/14-2027/28 is assumed to average 6.6 percent. The current account balance is projected to deteriorate from a surplus of 0.9 percent of GDP in 2007/08 to a moderate deficit of 1.6 percent of GDP by 2027/28 driven by the development needs, with remittances declining gradually as a share of GDP. New financing is assumed to rise from about US\$200 million in 2007/08 to US\$450 million by 2012/13; from 2013/14 onwards official disbursements are expected to gradually decline as a share of GDP. The grant element of new borrowing is assumed to gradually decline during the projection period, with an average of 46 percent.

C. Baseline

PPG External Debt

3. **A key feature of the LIC–DSA framework is that it compares debt burden indicators to indicative policy-based thresholds.** The thresholds are based on the empirical finding that low-income countries with stronger policies and institutions tend to have a higher debt carrying capacity. Nepal is classified as a medium performer based on its three year average CPIA score during 2004-06. At end-2007, Nepal's NPV of public debt-to-exports ratio is estimated at 148 percent (the relevant policy based indicative threshold is

¹ The projected increase in the fiscal spending in 2007/08 is driven mainly by pre-election and election spending, higher costs associated with clearing Nepal Oil Corporation's arrears, and increased donor flows.

150 percent). The ratio is projected to fall to 87 percent by 2027/28. Other indicators remain below the policy-based indicative thresholds throughout the projection period.²

4. **In the baseline scenario, debt burden ratios are projected to fall between 2007/08 and 2027/28** (Table 1). The NPV of external public debt-to-GDP is projected to decline from 20 percent to around 12 percent; the NPV of external public debt-to-exports is projected to fall from 148 percent to 87 percent; and the external public debt service-to-exports ratio is projected to decline from 9 percent to 6 percent.³

Nepal: Indicative External Debt Burden Indicators			
	Indicative Thresholds	Nepal: 2006/07	Nepal: projected average 2007/08- 2027/28
NPV of debt, in percent of			
Exports	150	148	116
GDP	40	22	15
Revenue	250	163	114
Debt Service, in percent of			
Exports	20	11	7
Revenues	30	12	6

Total Public Debt

5. **Domestic debt accounts for about 30 percent of total public debt at end-2007.** For the baseline scenario, the NPV of public debt-to-GDP ratio declines from 35 percent at end 2007/08 to 26 percent by 2027/28 (Table 4, Figure 2). Over the same period, the NPV of public debt to-revenue ratio falls from 216 percent to 157 percent, and the public debt service-to revenue ratio decreases from 17 percent to 12 percent.

² The baseline projections expect the current account, which has been historically a surplus in Nepal, to unwind gradually into a deficit, as spending and higher growth result in more imports of goods and services and the surge in remittances stabilizes. The average current account deficit over the projection period 2008-28 is a little over 1 percent of GDP relative to the historical average of a surplus current account of 3.4 percent. The results of the historical scenario, where the current account surplus of 3.4 percent of GDP continues into the projection period, suggests negative borrowing and thereby steady declines in debt. In view of this, debt is constrained to zero in 2018.

³ Given the high concessionality of external debt, the debt service-to-exports ratio is low, and at levels similar or lower than to most HIPCs after full HIPC debt relief. The ratio reflects debt service on existing debt and debt service on projected disbursements.

D. Sensitivity Analysis

6. Stress tests and alternative scenarios suggest vulnerability to shocks.

- **Total public debt:** A shock modeled as real GDP growth at historical average minus one standard deviations in 2009-10 results in the NPV of debt-to-GDP ratio increasing from 35 percent in 2008 to 41 percent in 2028; the NPV of Debt-to-Revenues-and-Grants ratio increases from 215 to 250 percent; and the debt service to revenue ratio increases from 17 to 23 percent. This scenario illustrates the importance of the peace dividend as reflected in stronger real GDP growth. Alternative scenarios reveal vulnerabilities from maintaining the 2008 fiscal stance (primary balance), which could result in the NPV of debt-to-GDP ratio increasing from 35 in 2008 to 44 percent in 2028.
- **External debt:** Bound tests indicate that the NPV of debt-to-export ratio is sensitive to shocks. Following a combined, half-standard deviation shock to export growth, GDP deflator, and net non-debt creating flows, the NPV of debt-to-exports ratio increases significantly, peaking at near 300 percent in 2010, and stays above the threshold for most of the projection period. Other bound tests (e.g. shocks to exports and non-debt creating flows) also cause the NPV of debt-to-exports to break the thresholds. These results are partly driven by Nepal's volatile export performance in the past decade. Shocks to other debt indicators such as the NPV of debt-to-GDP and debt service-to-revenue, result in trajectories below threshold values.

E. Staff Assessment

7. **Based on the LIC-DSA, staffs conclude that Nepal's external debt dynamics are subject to a moderate risk of distress.** Since the last DSA in 2007, the initial net present value of debt has improved due to the appreciation of the Nepalese rupee and lower than projected loan disbursements in the interim. In contrast to the previous DSA, the baseline scenario does not indicate a protracted breach of debt thresholds. In view of this, Nepal's external debt dynamics are assessed to be subject to a moderate risk of debt distress. This said, bound tests reflecting shocks to export growth and non-debt creating flows could result in protracted breach of the debt thresholds. The sensitivity analyses underscore the need to implement sound macroeconomic policies and reforms, including through raising the real GDP growth rate and achieving higher export growth. Stronger and more stable growth in

exports contributing to higher GDP growth, combined with foreign financing at favorable terms—preferably through grants—would help Nepal make progress toward achieving its MDG targets while containing risks to debt sustainability.

Table 1. Nepal: External Debt Sustainability Framework, Baseline Scenario, 2008-2028 1/
(In percent of GDP, unless otherwise indicated)

	Actual		Historical Average 6/	Standard Deviation 6/	Projections										2014-28 Average											
	2006	2007			2008	2009	2010	2011	2012	2013	2014	2015	2016	2017		2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
External debt (nominal) 1/	37.9	35.5	29.1	28.7	27.8	27.0	26.6	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5
o/w public and publicly guaranteed (PPG)	35.3	33.0	26.9	26.4	25.4	24.6	24.2	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1
Change in external debt	-7.1	-2.5	-6.3	-0.4	-1.0	-0.8	-0.4	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Identified net debt-creating flows	-9.9	-5.4	-1.9	-2.5	-2.0	-1.8	-1.1	-0.7	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8
Non-interest current account deficit	-2.5	-0.9	-0.9	-1.3	-0.7	-0.5	0.2	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Deficit in balance of goods and services	18.1	18.4	18.7	20.6	20.7	20.6	21.0	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1
Exports	13.6	13.2	12.1	12.3	12.1	12.1	12.2	12.1	12.1	12.1	12.1	12.2	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1
Imports	31.7	31.6	30.8	32.8	32.7	32.7	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3
Net current transfers (negative = inflow)	-19.5	-17.9	-18.4	-20.7	-20.2	-19.8	-19.6	-19.2	-19.2	-19.2	-19.2	-19.2	-19.2	-19.2	-19.2	-19.2	-19.2	-19.2	-19.2	-19.2	-19.2	-19.2	-19.2	-19.2	-19.2	-19.2
o/w official	-1.6	-2.0	-1.9	-3.3	-3.2	-3.1	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
Other current account flows (negative = net inflow)	-1.1	-1.3	-1.2	-1.2	-1.2	-1.2	-1.2	-1.2	-1.2	-1.2	-1.2	-1.2	-1.2	-1.2	-1.2	-1.2	-1.2	-1.2	-1.2	-1.2	-1.2	-1.2	-1.2	-1.2	-1.2	-1.2
Net FDI (negative = inflow)	0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3
Endogenous debt dynamics 2/	-7.4	-4.5	-0.9	-1.0	-1.1	-1.2	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1
Contribution from nominal interest rate	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Contribution from real GDP growth	-1.0	-0.8	-1.1	-1.3	-1.3	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4
Contribution from price and exchange rate changes	-6.7	-4.0	-4.4	2.1	1.0	1.1	0.8	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Residual (3-4) 3/	2.8	2.9	-4.4	2.1	1.0	1.1	0.8	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
o/w exceptional financing	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
NPV of external debt 4/	...	22.1	19.4	19.3	18.8	18.3	18.1	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0
In percent of exports	...	167.3	160.4	157.6	155.6	151.8	148.4	148.5	148.5	148.5	148.5	148.5	148.5	148.5	148.5	148.5	148.5	148.5	148.5	148.5	148.5	148.5	148.5	148.5	148.5	148.5
NPV of PPG external debt	...	19.6	17.1	17.0	16.4	16.0	15.7	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6
In percent of exports	...	148.5	141.7	138.5	136.1	132.1	128.8	128.7	128.7	128.7	128.7	128.7	128.7	128.7	128.7	128.7	128.7	128.7	128.7	128.7	128.7	128.7	128.7	128.7	128.7	128.7
In percent of government revenues	...	163.0	127.1	129.9	120.1	113.3	107.8	103.3	103.3	103.3	103.3	103.3	103.3	103.3	103.3	103.3	103.3	103.3	103.3	103.3	103.3	103.3	103.3	103.3	103.3	103.3
Debt service-to-exports ratio (in percent)	13.8	10.8	10.4	10.1	10.0	9.6	9.3	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9
PPG debt service-to-exports ratio (in percent)	13.8	10.8	9.2	9.1	9.0	8.6	8.3	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9
PPG debt service-to-revenue ratio (in percent)	17.2	11.9	8.2	8.5	8.0	7.4	6.9	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
Total gross financing need (billions of U.S. dollars)	0.2	0.3	0.3	0.2	0.3	0.4	0.5	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Non-interest current account deficit that stabilizes debt ratio	4.6	1.6	5.4	-0.9	0.3	0.3	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Key macroeconomic assumptions																										
Real GDP growth (in percent)	2.8	2.5	3.8	4.5	5.0	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
GDP deflator in US dollar terms (change in percent)	17.5	11.7	4.0	7.2	1.2	3.5	3.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Effective interest rate (percent) 5/	0.9	0.9	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Growth of exports of G&S (US dollar terms, in percent)	2.0	10.8	8.9	7.2	6.9	8.9	8.8	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
Growth of imports of G&S (US dollar terms, in percent)	17.5	13.9	15.8	12.7	8.4	8.5	9.6	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7
Grant element of new public sector borrowing (in percent)	...	...	47.0	46.8	46.7	46.6	46.5	46.4	46.4	46.4	46.4	46.4	46.4	46.4	46.4	46.4	46.4	46.4	46.4	46.4	46.4	46.4	46.4	46.4	46.4	46.4
<i>Memorandum items:</i>																										
Nominal GDP (billions of US dollars)	8.9	10.2	12.1	12.8	13.9	15.1	16.3	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6

Source: Staff simulations.

1/ Includes both public and private sector external debt.

2/ Derived as $[-g - \rho(1+g)] / (1+g + p+g)$ 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 NPV 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 NPV of new debt).

Table 2. Nepal: Sensitivity Analyses for Key Indicators of Public and Publicly Guaranteed External Debt, 2008-28
(In percent)

	Projections							
	2008	2009	2010	2011	2012	2013	2018	2028
NPV of debt-to-GDP ratio								
Baseline	17	17	16	16	16	16	14	12
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2009-28 1/	17	16	14	13	11	9	0	0
A2. New public sector loans on less favorable terms in 2009-28 2/	17	18	17	18	18	18	19	19
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2009-10	17	17	17	17	17	17	15	12
B2. Export value growth at historical average minus one standard deviation in 2009-10 3/	17	18	20	19	19	19	17	13
B3. US dollar GDP deflator at historical average minus one standard deviation in 2009-10	17	18	18	18	18	17	16	13
B4. Net non-debt creating flows at historical average minus one standard deviation in 2009-10 4/	17	22	25	24	24	24	21	14
B5. Combination of B1-B4 using one-half standard deviation shocks	17	22	29	28	27	27	23	16
B6. One-time 30 percent nominal depreciation relative to the baseline in 2009 5/	17	24	23	23	22	22	21	17
NPV of debt-to-exports ratio								
Baseline	142	138	136	132	129	129	120	87
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2009-28 1/	142	129	117	104	87	72	0	0
A2. New public sector loans on less favorable terms in 2009-28 2/	142	143	145	145	146	151	159	143
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2009-10	142	138	136	132	129	129	120	87
B2. Export value growth at historical average minus one standard deviation in 2009-10 3/	142	184	251	243	236	235	213	144
B3. US dollar GDP deflator at historical average minus one standard deviation in 2009-10	142	138	136	132	129	129	120	87
B4. Net non-debt creating flows at historical average minus one standard deviation in 2009-10 4/	142	176	209	202	196	194	171	106
B5. Combination of B1-B4 using one-half standard deviation shocks	142	204	291	281	272	269	236	145
B6. One-time 30 percent nominal depreciation relative to the baseline in 2009 5/	142	138	136	132	129	129	120	87
NPV of debt-to-revenue ratio								
Baseline	127	130	120	113	108	103	100	79
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2009-28 1/	127	121	103	89	73	58	0	0
A2. New public sector loans on less favorable terms in 2009-28 2/	127	134	128	125	122	121	133	129
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2009-10	127	133	127	120	114	109	106	83
B2. Export value growth at historical average minus one standard deviation in 2009-10 3/	127	140	146	138	130	124	117	86
B3. US dollar GDP deflator at historical average minus one standard deviation in 2009-10	127	136	134	126	120	115	111	88
B4. Net non-debt creating flows at historical average minus one standard deviation in 2009-10 4/	127	166	185	173	164	155	143	96
B5. Combination of B1-B4 using one-half standard deviation shocks	127	170	210	197	186	176	161	106
B6. One-time 30 percent nominal depreciation relative to the baseline in 2009 5/	127	185	171	161	153	147	142	112

Source: Staff projections and simulations.

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. Owing to the debt dynamics based on the historical period, the NPV of debt turns negative and is therefore set to zero.

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.Nepal: Public Sector Debt Sustainability Framework, Baseline Scenario, 2005-2028
(In percent of GDP, unless otherwise indicated)

	Actual			Estimate					Projections					2014-28 Average
	2006	2007	Historical Average S/ Deviation S/	2008	2009	2010	2011	2012	2013	2013	2018	2028		
Public sector debt 1/	56.7	46.7		44.6	44.3	43.0	41.7	40.3	38.8		33.6	32.5		
o/w foreign-currency denominated	35.3	33.0		26.9	26.4	25.4	24.6	24.0	23.6		21.7	17.7		
Change in public sector debt	-2.8	-10.0		-2.1	-0.3	-1.3	-1.3	-1.5	-1.5		-0.7	0.1		
Identified debt-creating flows	-6.7	-8.5		-0.2	-0.6	-1.7	-1.9	-2.1	-2.3		-0.2	0.6		
Primary deficit	0.7	0.5	1.5	2.6	1.4	1.0	0.7	0.5	0.1	1.1	1.4	1.9		
Revenue and grants	13.1	14.3		16.1	16.4	16.8	17.2	17.6	18.0		16.8	16.4		
of which: grants	2.1	2.3		2.7	3.3	3.1	3.1	3.1	3.1		2.6	1.9		
Primary (noninterest) expenditure	13.8	14.8		18.8	17.8	17.8	17.9	18.0	18.1		18.2	18.3		
Automatic debt dynamics	-7.4	-9.0		-2.9	-2.0	-2.7	-2.6	-2.6	-2.5		-1.6	-1.3		
Contribution from interest rate/growth differential	-2.4	-0.9		0.0	0.0	0.0	0.1	0.1	0.1		0.3	0.4		
of which: contribution from average real interest rate	-1.6	-1.4		-1.7	-1.9	-2.1	-2.2	-2.2	-2.1		-1.8	-1.7		
of which: contribution from real GDP growth	-3.4	-6.7		-1.2	0.0	-0.6	-0.5	-0.5	-0.5		...	...
Contribution from real exchange rate depreciation	0.0	0.0		0.0	0.0	0.0	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		
Privatization receipts (negative)	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		
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		
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		
Residual, including asset changes	3.9	-1.5		-1.9	0.3	0.4	0.6	0.6	0.8		-0.5	-0.5		
NPV of public sector debt	43.9	33.3		34.9	34.9	34.1	33.1	32.0	30.8		26.3	26.4		
o/w foreign-currency denominated	22.6	19.6		17.1	17.0	16.4	16.0	15.7	15.6		14.5	11.6		
o/w external	22.6	19.6		17.1	17.0	16.4	16.0	15.7	15.6		14.5	11.6		
NPV of contingent liabilities (not included in public sector debt)	...	...		...	...	...	...	...	...		...	...
Gross financing need 2/	3.9	3.7		5.4	4.1	3.7	3.3	2.9	2.5		3.5	3.9		
NPV of public sector debt-to-revenue and grants ratio (in percent)	335.0	233.3		216.2	213.3	202.8	192.1	182.1	171.3		156.6	161.0		
NPV of public sector debt-to-revenue ratio (in percent)	398.8	277.5		258.7	266.9	249.0	234.6	221.4	207.3		185.3	182.2		
o/w external 3/	204.7	163.0		127.1	129.9	120.1	113.3	108.8	105.3		101.9	80.1		
Debt services-to-revenue and grants ratio (in percent) 4/	24.1	22.3		17.5	16.5	16.0	15.3	14.1	13.3		12.3	12.2		
Debt services-to-revenue ratio (in percent) 4/	28.7	26.5		20.9	20.6	19.7	18.6	17.1	16.1		14.6	13.9		
Primary deficit that stabilizes the debt-to-GDP ratio	3.5	10.5		4.7	1.7	2.3	2.0	1.9	1.6		2.0	1.8		
Key macroeconomic and fiscal assumptions														
Real GDP growth (in percent)	2.8	2.5	3.3	3.8	4.5	5.0	5.5	5.5	5.5		5.0	5.5		
Average nominal interest rate on forex debt (in percent)	1.0	1.1	1.0	1.1	1.3	1.2	1.2	1.2	1.2		1.2	1.0		
Average real interest rate on domestic currency debt (in percent)	-11.5	-4.6	-0.7	0.0	-0.6	-0.2	0.2	0.2	0.2		0.0	2.8		
Real exchange rate depreciation (in percent, + indicates depreciation)	-8.2	-19.5	-2.6	-3.7	...	...	...	...	...		...	...
Inflation rate (GDP deflator, in percent)	17.9	8.6	6.4	6.5	6.0	5.5	5.0	5.0	5.0		5.5	3.0		
Growth of real primary spending (deflated by GDP deflator, in percent)	-7.0	8.4	3.3	33.2	-1.0	5.3	6.1	6.2	5.9		9.3	5.5		

Sources: Country authorities; and Fund staff estimates and projections.

1/ Public and publicly guaranteed debt.

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.Nepal: Sensitivity Analysis for Key Indicators of Public Debt 2008-2028

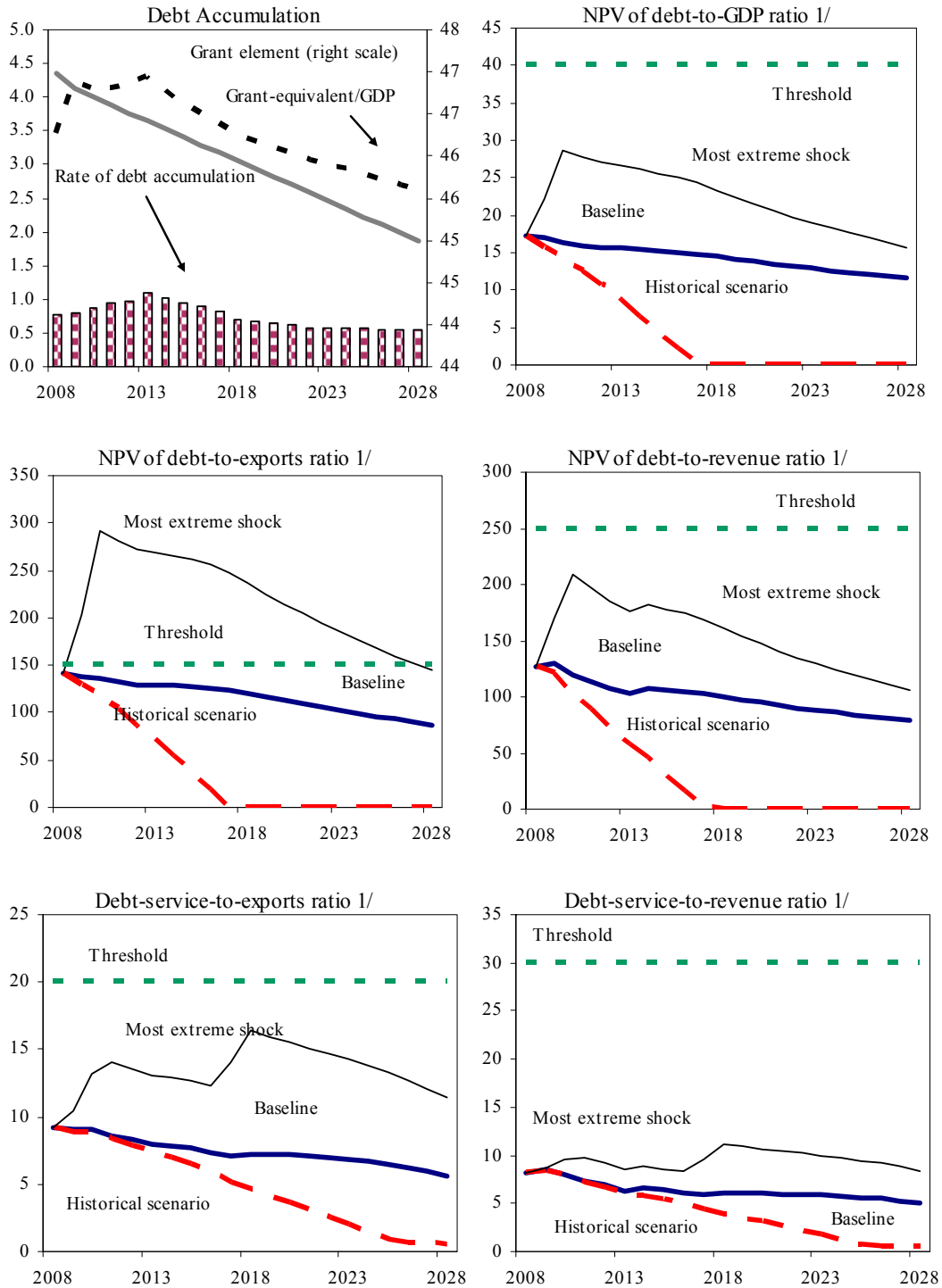
	Projections							
	2008	2009	2010	2011	2012	2013	2018	2028
NPV of Debt-to-GDP Ratio								
Baseline	35	35	34	33	32	31	26	26
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	35	35	35	35	36	36	35	34
A2. Primary balance is unchanged from 2008	35	36	36	37	38	38	39	44
A3. Permanently lower GDP growth 1/	35	35	34	33	33	32	30	38
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2009-2010	35	36	37	37	37	36	35	41
B2. Primary balance is at historical average minus one standard deviations in 2009-2010	35	36	37	36	35	33	28	28
B3. Combination of B1-B2 using one half standard deviation shocks	35	36	37	36	34	33	27	25
B4. One-time 30 percent real depreciation in 2009	35	42	41	39	37	36	30	28
B5. 10 percent of GDP increase in other debt-creating flows in 2009	35	44	43	41	40	38	33	31
NPV of Debt-to-Revenue Ratio 2/								
Baseline	216	213	203	192	182	171	157	161
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	214	213	207	204	202	200	202	197
A2. Primary balance is unchanged from 2008	215	218	216	214	214	214	232	266
A3. Permanently lower GDP growth 1/	215	212	203	193	185	176	175	230
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2009-2010	215	219	218	212	206	198	205	250
B2. Primary balance is at historical average minus one standard deviations in 2009-2010	215	220	220	208	197	185	169	168
B3. Combination of B1-B2 using one half standard deviation shocks	215	219	219	206	194	182	161	154
B4. One-time 30 percent real depreciation in 2009	215	258	242	227	213	199	176	170
B5. 10 percent of GDP increase in other debt-creating flows in 2009	215	268	253	239	226	213	195	189
Debt Service-to-Revenue Ratio 2/								
Baseline	17	16	16	15	14	13	12	12
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	17	17	17	17	17	17	16	16
A2. Primary balance is unchanged from 2008	17	16	18	19	19	20	20	26
A3. Permanently lower GDP growth 1/	17	17	16	16	15	14	15	20
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2009-2010	17	17	18	18	17	17	17	23
B2. Primary balance is at historical average minus one standard deviations in 2009-2010	17	16	19	20	16	15	13	14
B3. Combination of B1-B2 using one half standard deviation shocks	17	17	18	19	16	14	13	12
B4. One-time 30 percent real depreciation in 2009	17	17	17	16	15	14	13	14
B5. 10 percent of GDP increase in other debt-creating flows in 2009	17	16	35	23	18	16	15	17

Sources: Country authorities; and Fund staff estimates and projections.

1/ Assumes that real GDP growth is at baseline minus one standard deviation divided by the square root of 20 (i.e., the length of the projection period).

2/ Revenues are defined inclusive of grants.

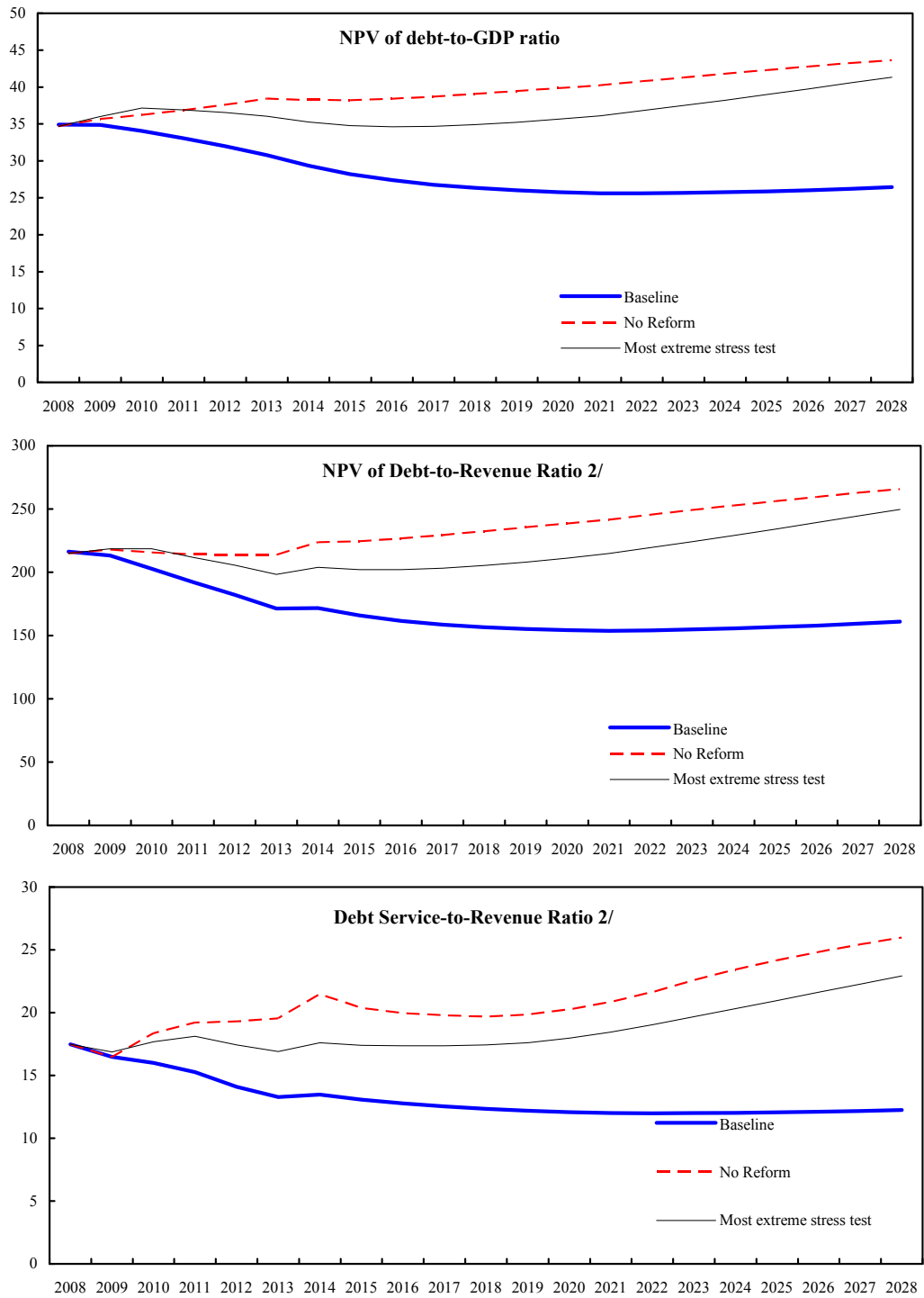
Figure 1. Nepal: Indicators of Public and Publicly Guaranteed External Debt Under Alternative Scenarios, 2008-2028



Source: Staff projections and simulations.

1/ Owing to the debt dynamics resulting from using historical averages, which cause the NPV of debt to become negative in part of the projection period, the debt indicators associated with a negative NPV of debt are set to zero.

Figure 2. Nepal: Indicators of Public Debt Under Alternative Scenarios, 2008-2028 1/



Source: Staff projections and simulations.

1/ Most extreme stress test is test that yields highest ratio in 2018.

2/ Revenue including grants.