INTERNATIONAL MONETARY FUND

NEPAL

STAFF REPORT FOR THE 2011 ARTICLE IV CONSULTATION—DEBT SUSTAINABILITY ANALYSIS

September 26, 2011

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Nepal remains at moderate risk of debt distress.[1] The baseline external public debt sustainability indicators are more favorable compared to the previous Debt Sustainability Analysis (DSA), and external debt dynamics are resilient to standard stress tests, however total public debt ratios increase gradually over the projection period. External debt indicators breach the thresholds under an alternative scenario developed to analyze risks arising from heightened financial sector stress, highlighting the urgent need to address financial sector vulnerabilities. A prudent fiscal stance remains appropriate, and net domestic financing of deficits should be contained to around 2½ percent of GDP or less. Stronger efforts to improve the absorption capacity for foreign financing would release pressure on the domestic debt market, while structural reforms to boost long-run growth and revenue generation would improve overall public debt sustainability. The DSA results would change if large-scale external borrowing on commercial terms were to arise, for example to fund hydro development.

[1] The risk rating is determined using the Low-Income Country Debt Sustainability Analysis (LIC-DSA) framework. Nepal's fiscal years starts mid-July.

BACKGROUND

1. Nepal's total public debt stock is estimated at 36 percent of GDP at the end of 2009–10, having declined from 60 percent of GDP ten years ago. External public debt stood at US$ 3½ billion (22½ percent of GDP) at the end of 2009-10. The World Bank and the AsDB account for about 86 percent of the debt stock. The remainder is owed to bilateral donors, among which Japan is the main creditor accounting for about 7 percent of total external public debt. The domestic public debt stock stood at 13½ percent of GDP. In addition to public debt, private external debt stood at 1¾ percent of GDP, comprised entirely of trade credits.

MACROECONOMIC ASSUMPTIONS

2. The macroeconomic assumptions are less optimistic compared to the previous DSA due to the lack of progress on structural reforms and loss of competitiveness (Box 1).

- Real GDP growth is projected to rise from 3½ percent in 2010-11 to 4 percent in the long run, on par with historical experience. Inflation is projected to fall gradually in line with a projected easing of external inflation pressure over the longer term to about 5 percent, below Nepal's historical average.

- The external current account is expected to remain in deficit, due mainly to the impact of weaker competitiveness on the trade balance. Exports are projected to grow by about 7 percent per year in the long run, tourism should provide support, while imports are projected to grow by 8 percent per year. Remittance growth has slowed markedly, and in the medium term is projected to stabilize at around 12 percent before easing to around 7 percent in the long run, similar to the previous DSA.

- Government revenues including grants are projected to increase by about ½ percentage points of GDP in the long run, as enhanced administration more than offsets an unwinding of grant assistance for the peace process. Primary expenditure is projected to rise by about the same amount, such that the primary fiscal deficit remains around 2 percent of GDP. Net domestic financing is projected to gradually decline to around 2½ percent of GDP in the long run (from 2¾ percent in 2010-11), and access to external financing is projected to increase slightly to about 1 percentage point of GDP.

- The peg to the Indian rupee is assumed to remain at the current level over the projection period. With inflation relatively high over the medium term, this implies a real exchange rate appreciation.

- The concessionality of foreign loan terms is projected to decline gradually reflecting an increase in borrowing from non-traditional donors on relatively less favorable terms, for example to finance hydropower projects.

Box 1. Macro Assumptions Comparison Table

	Previous DSA		Current DSA			Differences (current vs. previous)	
	MT	LT	2011	MT	LT	MT	LT
Real growth (%)	4.2	5.3	3.5	3.8	4.0	-0.4	-1.3
Inflation (GDP deflator, %)	6.7	5.0	9.5	7.5	5.2	0.8	0.2
Nominal GDP (Bil. Nepalese Rupees)	1808	8096	1327	2050	8653	242	557
Revenue and grants (% GDP)	19.9	20.0	18.6	18.8	19.0	-1.0	-1.0
Grants (% GDP)	3.6	3.0	3.6	3.0	2.6	-0.6	-0.4
Primary expenditure (% GDP)	21.7	22.0	20.6	20.9	21.0	-0.8	-1.0
Primary deficit (% GDP)	1.8	2.1	2.0	2.1	2.0	0.3	-0.1
Net domestic financing, NDF (% GDP)	2.4	2.5	2.8	2.7	2.5	0.3	0.0
Net external financing, NEF (% GDP)	0.7	1.0	0.2	0.5	0.9	-0.2	-0.1
Exports of G&S (% GDP)	10.2	7.9	9.3	8.5	6.8	-1.8	-1.0
Imports of G&S (% GDP)	39.3	30.9	34.4	33.4	32.8	-5.9	1.9
Remittances (% GDP)	18.8	12.5	19.4	15.4	12.0	-3.4	-0.4
Noninterest Current account deficit (% GDP)	0.6	0.0	0.7	0.8	2.6	0.2	2.6

Note. MT stands for medium term and reflects average over the next 5 years, and LT refers to long term and generally reflects the average over the last 15 years of the projection period. For GDP, both in dollars in local currency, MT and LT reflect figures for 2015 and 2031, respectively. Fiscal numbers are estimated/projected using GFS 1986 format.

EXTERNAL DEBT SUSTAINABILITY

A. Baseline

3. Under the baseline debt projections, Nepal's debt indicators are well-below the indicative thresholds (Table 3b, Figure 1).[2] As in the previous DSA, remittances are formally included in the analysis, given their importance in Nepal's economy and as a source of foreign exchange inflows—equal to about 19 percent of GDP and two times exports of goods and services in 2010–11.[3] Projections indicate that debt ratios are set to improve over the long term.

[2] The LIC-DSA framework 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 CPIA score during 2008-2010.

[3] Remittances are added to exports and GDP in debt indicator denominators. See *Nepal: Joint IMF/World Bank Debt Sustainability Analysis*, May 2010, and *Staff Guidance Note on the Application of the Joint Fund-Bank DSA for Low-Income Countries*, SM/10/16, 01/25/2010.

Nepal: Indicative External Debt Burden Indicators

	Indicative thresholds	Nepal: 2010/11	Nepal: projected average 2010/11-2030/31
PV of debt, in percent of:			
GDP and remittances	36	11.2	7.4
exports and remittances	135	46.7	33.0
revenue	250	89.8	54.4
Debt service, in percent of:			
exports and remittances	18	3.2	2.1
revenues	30	6.2	3.4

B. Stress Tests and Alternative Scenario

4. Nepal's debt is resilient to standard stress tests. The standard stress tests include two-year shocks to real GDP growth, lower export growth, lower transfers and FDI, a combination of the previous three shocks, and a one-time exchange rate depreciation.[4] The most severe stress tests are lower transfers (i.e. remittances) and the combination of shocks, though debt indicator thresholds are not breached in either case (Figure 1).

5. The standard stress tests do not capture the potential risks to debt sustainability stemming from financial sector fragility in Nepal. Credit quality has deteriorated and liquidity strains increased significantly following the bursting of a bubble in the real estate market, to which financial institutions are highly exposed and where prices have fallen by around 50 percent from their peak. Some smaller institutions have run into severe distress, with a large number requiring emergency liquidity assistance. Systemic fragilities are heightened by inadequate governance and risk management in banks, and a proliferation of financial institutions and financial interconnectedness in an environment of weak supervision. Moreover, two state banks accounting for about 14 percent of system deposits continue to operate with negative capital. Financial sector vulnerabilities are examined in a hypothetical financial stress scenario that could arise from a loss of confidence or an adverse shock to remittances leading to self-reinforcing feedback between deposit and capital flight, and systemic dislocation in the banking system. It assumes reserves loss, a one-time depreciation of the exchange rate, and a sharp contraction in output. The fiscal costs of financial sector restructuring are assumed at 27 percent of GDP over a 4 year period, which is in line with the average cost experienced in a range of countries under similar circumstances.[5] Slightly more than half of this cost is assumed to be foreign financed. Under this scenario, the PV of external debt-to-GDP-and-remittances ratio increases significantly, peaking at 38 percent in 2014–15 and remaining above the threshold until 2016–17 (see Figure 1). The PV of external debt-

[4] Standard stress tests assume shocks to these variables based on means and standard deviations of historical distributions.

[5] See Laeven and Valencia, *Systemic Banking Crises: A New Database*, IMF Working Paper 08/224.

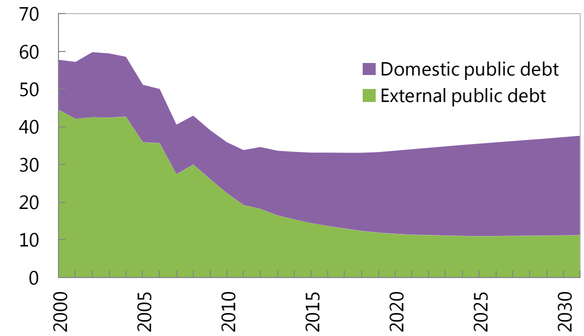
to-exports-and-remittances would be at or above the threshold in 2015 and from 2023 onward, and the ratio to revenues would breach the threshold for over 10 years. The debt service indicators increase while remaining below thresholds.

PUBLIC DEBT SUSTAINABILITY

6. **Under the baseline scenario, the PV of public debt is on a gradual rising trend over the projection period.** As a share of GDP, the PV of public debt increases from 28 percent in 2010–11 to 35 by the end of the projection period. In percent of revenue and grants, the PV of public debt increases from 151 percent to 184 percent.

7. **Although the total level of public debt remains within reasonable bounds, its composition is projected to shift towards more domestic debt, reflecting the higher share of domestic compared to foreign financing of deficits.** In the context of the current exchange-rate peg and if competitiveness and financial sector vulnerabilities are not addressed, a significant increase in public domestic debt would be increasingly difficult to accommodate. As a result, real interest rates would likely increase, possibly leading to a crowding out of private sector credit or a curtailment of primary fiscal expenditures on poverty and development related goals.

Evolution of the Composition of Public Debt
(% GDP, 2000–2031)



8. **Stress tests suggest vulnerabilities to shocks.** The largest adverse impact arises under the heightened financial stress scenario outlined above (Table 2). Among the standard stress tests, the largest impact on public debt arises from a one-time increase in other debt-creating flows. This would increase the PV of debt-to-GDP by close to 10 percentage points and leave it at higher levels for a prolonged period. Under the same stress scenario, debt service indicators show a significant spike from 11 percent of revenues to a peak of 36 percent.

AUTHORITIES' VIEW

9. **The authorities concurred with the DSA and its policy messages**. They are cognizant of the risk that financial sector stress poses to debt indicators. However, they suggest that weaknesses are limited to a few banks and are unlikely to develop into a broader problem. They also recognize the need to improve absorption of donor funds to curb the increase in domestic debt.

CONCLUSION

10. Nepal faces a moderate risk of external public debt distress. Although none of the external debt burden indicators breach the thresholds in the baseline scenario, under a heightened financial stress scenario, the debt burden rises notably, with external debt breaching thresholds. This underscores the need to implement reforms to address financial sector weaknesses in a timely manner. The analysis also suggests that a significant increase in domestic debt would threaten private sector credit or development-related primary expenditures. This highlights the importance of containing net domestic financing of deficits to around 2½ percent of GDP or less, through fiscal discipline, revenue efforts, and increased use of donor financial support.

Table 1. Nepal: Public Sector Debt Sustainability Framework, Baseline Scenario, 2008-2031
(In percent of GDP, unless otherwise indicated)

	Actual					Estimate	Projections								
	2008	2009	2010	Average	Standard Deviation	2011	2012	2013	2014	2015	2016	2011-16 Average	2021	2031	2017-31 Average
Public sector debt 1/	43.0	39.2	35.9			33.8	34.7	33.7	33.4	33.2	33.2		35.5	39.6	
o/w foreign-currency denominated	30.0	26.1	22.4			19.2	18.2	16.5	15.4	14.4	13.7		12.7	12.6	
Change in public sector debt	2.4	-3.8	-3.2			-2.1	0.8	-1.0	-0.3	-0.2	0.0		0.4	0.4	
Identified debt-creating flows	-1.4	-1.4	-4.9			-2.2	0.7	-1.1	-0.4	-0.3	-0.1		0.3	0.4	
Primary deficit	1.3	2.2	1.2	1.0	1.2	2.1	2.8	2.0	1.9	1.9	1.9	2.1	2.0	2.1	2.0
Revenue and grants	15.3	16.8	18.2			18.6	18.7	18.9	18.9	18.9	19.0		19.0	19.0	
of which: grants	2.5	2.7	3.0			3.6	3.3	3.0	2.9	2.7	2.7		2.6	2.6	
Primary (noninterest) expenditure	16.7	19.0	19.3			20.7	21.6	20.9	20.9	20.8	20.9		20.9	21.1	
Automatic debt dynamics	-2.2	-3.6	-6.0			-4.3	-2.1	-3.1	-2.3	-2.2	-1.9		-1.7	-1.8	
Contribution from interest rate/growth differential	-2.8	-3.0	-2.5			-1.8	-1.5	-1.6	-1.5	-1.5	-1.4		-1.1	-1.2	
of which: contribution from average real interest rate	-0.4	-1.1	-0.8			-0.6	-0.3	-0.3	-0.3	-0.2	-0.1		0.3	0.3	
of which: contribution from real GDP growth	-2.3	-1.8	-1.7			-1.2	-1.2	-1.3	-1.2	-1.2	-1.2		-1.4	-1.5	
Contribution from real exchange rate depreciation	0.6	-0.7	-3.5			-2.5	-0.6	-1.5	-0.8	-0.7	-0.6		...	...	
Other identified debt-creating flows	-0.5	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Privatization receipts (negative)	-0.5	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	3.8	-2.4	1.6			0.1	0.1	0.1	0.1	0.1	0.1		0.1	0.1	
Other Sustainability Indicators															
PV of public sector debt	...	...	29.2			28.1	29.1	28.6	28.6	28.6	28.8		31.1	34.9	
o/w foreign-currency denominated	...	...	15.7			13.4	12.7	11.4	10.6	9.9	9.3		8.3	7.8	
o/w external	...	...	15.7			13.4	12.7	11.4	10.6	9.9	9.3		8.3	7.8	
PV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...	
Gross financing need 2/	15.9	15.6	14.6			16.1	18.1	18.2	18.1	18.8	19.5		21.7	24.3	
PV of public sector debt-to-revenue and grants ratio (in percent)	...	...	160.8			151.3	155.4	151.4	151.0	151.4	151.3		164.1	184.0	
PV of public sector debt-to-revenue ratio (in percent)	...	...	192.1			187.7	188.4	179.6	178.1	176.4	176.1		190.7	213.6	
o/w external 3/	...	...	103.4			89.8	82.1	71.6	66.2	60.9	56.8		51.0	48.0	
Debt service-to-revenue and grants ratio (in percent) 4/	18.2	16.2	13.4			11.1	11.9	11.8	11.9	12.0	12.2		13.2	13.5	
Debt service-to-revenue ratio (in percent) 4/	21.7	19.3	16.0			13.8	14.4	14.0	14.0	14.0	14.2		15.3	15.7	
Primary deficit that stabilizes the debt-to-GDP ratio	-1.0	6.0	4.4			4.2	2.0	3.0	2.2	2.1	1.9		1.6	1.7	
Key macroeconomic and fiscal assumptions															
Real GDP growth (in percent)	6.1	4.4	4.6	4.0	1.6	3.5	3.8	3.8	3.8	3.8	3.9	3.8	4.0	4.0	4.0
Average nominal interest rate on forex debt (in percent)	1.1	0.9	1.0	1.0	0.1	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.0	1.0	1.0
Average real interest rate on domestic debt (in percent)	-1.2	-9.1	-6.6	-1.5	4.0	-3.4	-1.3	-1.6	-1.3	-0.8	-0.1	-1.4	0.8	0.8	0.7
Real exchange rate depreciation (in percent, + indicates depreciation)	2.2	-2.3	-14.1	-3.7	6.9	-11.8	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	5.6	16.0	13.4	7.0	4.4	9.5	8.0	7.6	7.3	6.8	6.0	7.5	5.0	5.0	5.2
Growth of real primary spending (deflated by GDP deflator, in percent)	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Grant element of new external borrowing (in percent)	...	...	...	...	...	43.9	43.9	43.9	43.9	43.9	43.8	43.9	43.6	43.1	...

Sources: Country authorities; and staff estimates and projections.
1/ These debt statistics cover the general government. They exclude non-financial public enterprises. Debt is reported net of government deposits at the NRB.
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 2. Nepal: Sensitivity Analysis for Key Indicators of Public Debt 2011-2031

	Projections							
	2011	2012	2013	2014	2015	2016	2021	2031
PV of Debt-to-GDP Ratio								
Baseline	28	29	29	29	29	29	31	35
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	28	28	26	26	25	25	25	25
A2. Primary balance is unchanged from 2011	28	28	28	28	29	29	32	36
A3. Permanently lower GDP growth 1/	28	29	29	29	29	30	35	45
A4. Financial sector stress scenario	28	62	68	72	75	71	64	69
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2012-2013	28	30	30	30	31	31	35	40
B2. Primary balance is at historical average minus one standard deviations in 2012-2013	28	29	28	28	28	29	31	35
B3. Combination of B1-B2 using one half standard deviation shocks	28	28	28	28	28	29	32	37
B4. One-time 30 percent real depreciation in 2012	28	35	33	33	32	32	33	35
B5. 10 percent of GDP increase in other debt-creating flows in 2012	28	38	37	36	35	35	36	37
PV of Debt-to-Revenue Ratio 2/								
Baseline	151	155	151	151	151	151	164	184
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	151	147	139	135	133	130	131	131
A2. Primary balance is unchanged from 2011	151	152	149	150	151	152	169	187
A3. Permanently lower GDP growth 1/	151	156	153	154	156	157	181	233
A4. Financial sector stress scenario	151	340	378	398	413	394	358	388
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2012-2013	151	158	158	160	162	163	183	212
B2. Primary balance is at historical average minus one standard deviations in 2012-2013	151	153	150	150	150	150	163	184
B3. Combination of B1-B2 using one half standard deviation shocks	151	151	146	147	149	150	168	194
B4. One-time 30 percent real depreciation in 2012	151	185	176	173	171	169	175	184
B5. 10 percent of GDP increase in other debt-creating flows in 2012	151	202	195	190	188	184	189	198
Debt Service-to-Revenue Ratio 2/								
Baseline	11	12	12	12	12	12	13	14
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	11	12	11	7	8	7	6	3
A2. Primary balance is unchanged from 2011	11	12	12	10	12	12	14	14
A3. Permanently lower GDP growth 1/	11	12	12	12	13	13	16	22
A4. Financial sector stress scenario	11	18	25	28	30	30	25	28
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2012-2013	11	12	12	13	14	14	17	18
B2. Primary balance is at historical average minus one standard deviations in 2012-2013	11	12	12	10	12	12	13	13
B3. Combination of B1-B2 using one half standard deviation shocks	11	12	11	9	10	11	14	15
B4. One-time 30 percent real depreciation in 2012	11	13	14	14	15	15	16	17
B5. 10 percent of GDP increase in other debt-creating flows in 2012	11	12	15	36	20	25	17	15

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.

Table 3a. Nepal: External Debt Sustainability Framework, Baseline Scenario, 2008-2031 1/
(In percent of GDP, unless otherwise indicated)

	Actual			Historical Average	Standard Deviation	Projections									
												2011-2016			2017-2031
	2008	2009	2010			2011	2012	2013	2014	2015	2016	Average	2021	2031	Average
External debt (nominal) 1/	31.8	28.0	24.1			20.7	19.7	17.9	16.8	15.8	15.1		14.2	13.7	
o/w public and publicly guaranteed (PPG)	30.0	26.1	22.4			19.2	18.2	16.5	15.4	14.4	13.7		12.7	12.6	
Change in external debt	3.3	-3.8	-3.9			-3.4	-1.0	-1.8	-1.1	-1.0	-0.8		-0.3	-0.2	
Identified net debt-creating flows	-7.8	-5.1	-2.9			-0.3	-0.2	-0.1	0.1	0.3	0.4		0.7	3.6	
Non-interest current account deficit	-3.0	-4.4	2.2	-2.5	2.1	0.7	0.6	0.7	0.9	1.0	1.0		1.3	4.3	2.6
Deficit in balance of goods and services	19.3	22.1	27.4			25.1	25.0	24.5	24.8	25.1	25.5		27.2	24.7	
Exports	12.1	12.4	9.8			9.3	9.1	8.5	8.2	7.9	7.7		7.6	6.2	
Imports	31.4	34.5	37.1			34.4	34.1	32.9	33.0	33.0	33.2		34.8	30.9	
Net current transfers (negative = inflow)	-21.2	-25.1	-24.2	-18.6	3.8	-23.6	-23.7	-23.1	-23.3	-23.5	-23.9		-25.4	-20.3	-23.3
o/w official	-2.2	-2.5	-1.9			-1.8	-1.8	-1.7	-1.7	-1.6	-1.5		-1.7	-1.8	
Other current account flows (negative = net inflow)	-1.2	-1.4	-1.0			-0.7	-0.7	-0.7	-0.6	-0.6	-0.6		-0.5	-0.1	
Net FDI (negative = inflow)	0.0	-0.2	-0.2	-0.1	0.1	-0.5	-0.3	-0.2	-0.2	-0.2	-0.2		-0.3	-0.3	-0.3
Endogenous debt dynamics 2/	-4.8	-0.5	-4.9			-0.5	-0.5	-0.5	-0.5	-0.4	-0.4		-0.4	-0.4	
Contribution from nominal interest rate	0.3	0.3	0.2			0.2	0.2	0.2	0.1	0.1	0.1		0.1	0.1	
Contribution from real GDP growth	-1.4	-1.4	-1.0			-0.7	-0.7	-0.6	-0.6	-0.6	-0.6		-0.5	-0.5	
Contribution from price and exchange rate changes	-3.6	0.6	-4.1			...	...	...	...	...	...		...	...	
Residual (3-4) 3/	11.1	1.3	-1.0			-3.1	-0.8	-1.8	-1.2	-1.3	-1.1		-0.9	-3.8	
o/w exceptional financing	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/	...	...	17.4			15.0	14.2	12.8	12.0	11.3	10.7		9.9	9.0	
In percent of exports	...	...	177.9			160.4	156.6	151.7	146.8	142.2	138.3		130.2	144.4	
PV of PPG external debt (in percent of GDP and remittances)	...	...	13.1			11.2	10.6	9.6	8.9	8.2	7.7		6.9	6.7	
In percent of exports and remittances	...	...	53.1			46.7	44.2	41.1	38.2	35.5	33.1		28.8	35.0	
In percent of government revenues	...	...	103.4			89.8	82.1	71.6	66.2	60.9	56.8		51.0	48.0	
Debt service-to-exports-and-remittances ratio (in percent)	4.3	3.8	3.8			3.2	3.0	2.9	2.7	2.5	2.4		1.7	1.8	
PPG debt service-to-exports-and-remittances ratio (in percent)	4.3	3.8	3.8			3.2	3.0	2.9	2.7	2.5	2.4		1.7	1.8	
PPG debt service-to-revenue ratio (in percent)	9.6	8.9	7.4			6.2	5.6	5.1	4.7	4.3	4.1		3.1	2.5	
Total gross financing need (Billions of U.S. dollars)	-0.1	-0.2	0.7			0.5	0.5	0.6	0.7	0.8	0.9		1.3	6.2	
Non-interest current account deficit that stabilizes debt ratio	-6.3	-0.6	6.1			4.1	1.6	2.5	1.9	2.0	1.8		1.6	4.5	
Key macroeconomic assumptions															
Real GDP growth (in percent)	6.1	4.4	4.6	4.0	1.6	3.5	3.8	3.8	3.8	3.8	3.9	3.8	4.0	4.0	4.0
GDP deflator in US dollar terms (change in percent)	14.5	-1.9	16.9	6.6	6.7	12.7	7.1	10.6	6.6	6.8	6.0	8.3	5.0	5.0	4.4
Effective interest rate (percent) 5/	1.1	0.9	1.0	1.0	0.1	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.0	1.0	1.0
Growth of exports of G&S (US dollar terms, in percent)	5.4	4.9	-3.3	2.6	20.5	11.4	8.1	7.0	7.1	7.3	7.1	8.0	6.9	9.2	7.0
Growth of imports of G&S (US dollar terms, in percent)	11.2	12.5	31.7	16.2	7.7	8.1	10.1	10.9	10.9	10.8	10.9	10.3	7.9	7.9	8.0
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	43.9	43.9	43.9	43.9	43.9	43.8	43.9	43.6	43.1	43.4
Government revenues (excluding grants, in percent of GDP)	12.9	14.2	15.2			15.0	15.5	15.9	16.0	16.2	16.3		16.3	16.3	16.3
Aid flows (in Billions of US dollars) 7/	0.3	0.3	0.5			0.8	0.9	0.9	1.0	1.0	1.1		1.6	3.9	
o/w Grants	0.3	0.3	0.5			0.7	0.7	0.7	0.7	0.8	0.8		1.2	2.8	
o/w Concessional loans	0.0	0.0	0.0			0.1	0.2	0.2	0.2	0.2	0.2		0.4	1.0	
Grant-equivalent financing (in percent of GDP) 8/	...	...	...			4.1	3.9	3.5	3.4	3.2	3.2		3.2	3.2	3.2
Grant-equivalent financing (in percent of external financing) 8/	...	...	...			86.7	83.9	83.3	84.0	83.6	83.5		82.3	79.9	81.4
Memorandum items:															
Nominal GDP (Billions of US dollars)	12.5	12.9	15.7			18.3	20.4	23.4	25.9	28.7	31.6		44.9	108.2	
Nominal dollar GDP growth	21.5	2.4	22.2			16.6	11.2	14.8	10.6	10.9	10.1	12.4	9.2	9.2	8.6
PV of PPG external debt (in Billions of US dollars)			2.5			2.5	2.6	2.7	2.7	2.8	2.9		3.7	8.5	
(PVt-PVt-1)/GDPt-1 (in percent)						0.3	0.4	0.4	0.3	0.3	0.3	0.3	0.5	0.8	0.6
Gross workers' remittances (Billions of US dollars)	2.1	2.7	3.1			3.6	4.0	4.5	5.1	5.7	6.4		9.6	17.4	
PV of PPG external debt (in percent of GDP + remittances)	...	...	13.1			11.2	10.6	9.6	8.9	8.2	7.7		6.9	6.7	
PV of PPG external debt (in percent of exports + remittances)	...	...	53.1			46.7	44.2	41.1	38.2	35.5	33.1		28.8	35.0	
Debt service of PPG external debt (in percent of exports + remittances)	...	...	3.8			3.2	3.0	2.9	2.7	2.5	2.4		1.7	1.8	

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 3b. Nepal: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2011-2031
(In percent)

	Projections							
	2011	2012	2013	2014	2015	2016	**2021**	2031
PV of debt-to-GDP+remittances ratio								
Baseline	11	11	10	9	8	8	**7**	7
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011-2031 1/	11	9	7	5	3	1	**0**	0
A2. New public sector loans on less favorable terms in 2011-2031 2	11	11	10	10	9	9	**9**	11
A3. Financial sector stress scenario	11	33	35	37	38	36	32	31
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012-2013	11	11	10	9	8	8	**7**	7
B2. Export value growth at historical average minus one standard deviation in 2012-2013 3/	11	12	12	11	11	10	**9**	7
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012-2013	11	11	11	10	9	9	**8**	8
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012-2013 4/	11	16	19	17	15	14	**12**	8
B5. Combination of B1-B4 using one-half standard deviation shocks	11	17	22	19	18	16	**14**	9
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	11	14	12	12	11	10	**9**	9
PV of debt-to-exports+remittances ratio								
Baseline	47	44	41	38	36	33	**29**	35
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011-2031 1/	47	38	29	20	12	4	**0**	0
A2. New public sector loans on less favorable terms in 2011-2031 2	47	46	44	42	40	39	**39**	57
A3. Financial sector stress scenario	47	129	129	134	136	130	132	153
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012-2013	47	44	41	38	35	33	**29**	35
B2. Export value growth at historical average minus one standard deviation in 2012-2013 3/	47	53	61	56	52	48	**40**	43
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012-2013	47	44	41	38	35	33	**29**	35
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012-2013 4/	47	84	102	71	66	62	**51**	44
B5. Combination of B1-B4 using one-half standard deviation shocks	47	84	112	75	70	65	**53**	44
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	47	44	41	38	35	33	**29**	35
PV of debt-to-revenue ratio								
Baseline	90	82	72	66	61	57	**51**	48
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011-2031 1/	90	71	53	36	21	7	**0**	0
A2. New public sector loans on less favorable terms in 2011-2031 2	90	85	76	73	69	66	**69**	78
A3. Financial sector stress scenario	90	252	282	298	311	293	**258**	240
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012-2013	90	83	74	68	62	58	**52**	49
B2. Export value growth at historical average minus one standard deviation in 2012-2013 3/	90	90	92	85	78	73	**64**	52
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012-2013	90	88	85	78	72	67	**60**	56
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012-2013 4/	90	117	134	124	114	106	**91**	60
B5. Combination of B1-B4 using one-half standard deviation shocks	90	122	160	148	136	127	**108**	70
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	90	114	99	92	84	79	**70**	66

Table 3b. Nepal: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2011-2031 (continued)
(In percent)

Debt service-to-exports+remittances ratio								
Baseline	3	3	3	3	3	2	**2**	2
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011-2031 1/	3	3	3	3	2	2	**1**	0
A2. New public sector loans on less favorable terms in 2011-2031 2	3	3	3	3	3	3	**2**	3
A3. Financial sector stress scenario	3	6	8	8	9	9	**8**	10
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012-2013	3	3	3	3	3	2	**2**	2
B2. Export value growth at historical average minus one standard deviation in 2012-2013 3/	3	3	3	3	3	3	**2**	2
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012-2013	3	3	3	3	3	2	**2**	2
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012-2013 4/	3	4	4	3	3	3	**3**	3
B5. Combination of B1-B4 using one-half standard deviation shocks	3	4	4	3	3	3	**3**	3
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	3	3	3	3	3	2	**2**	2
Debt service-to-revenue ratio								
Baseline	6	6	5	5	4	4	**3**	2
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011-2031 1/	6	6	5	5	4	4	**1**	0
A2. New public sector loans on less favorable terms in 2011-2031 2	6	6	5	5	5	5	**4**	4
A3. Financial sector stress scenario	6	12	17	18	20	19	16	16
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012-2013	6	6	5	5	4	4	**3**	3
B2. Export value growth at historical average minus one standard deviation in 2012-2013 3/	6	6	5	5	5	4	**3**	3
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012-2013	6	6	6	6	5	5	**4**	3
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012-2013 4/	6	6	6	6	5	5	**5**	4
B5. Combination of B1-B4 using one-half standard deviation shocks	6	6	6	6	6	6	**5**	4
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	6	8	7	7	6	6	**4**	3
Memorandum item:								
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	41	41	41	41	41	41	**41**	41

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.

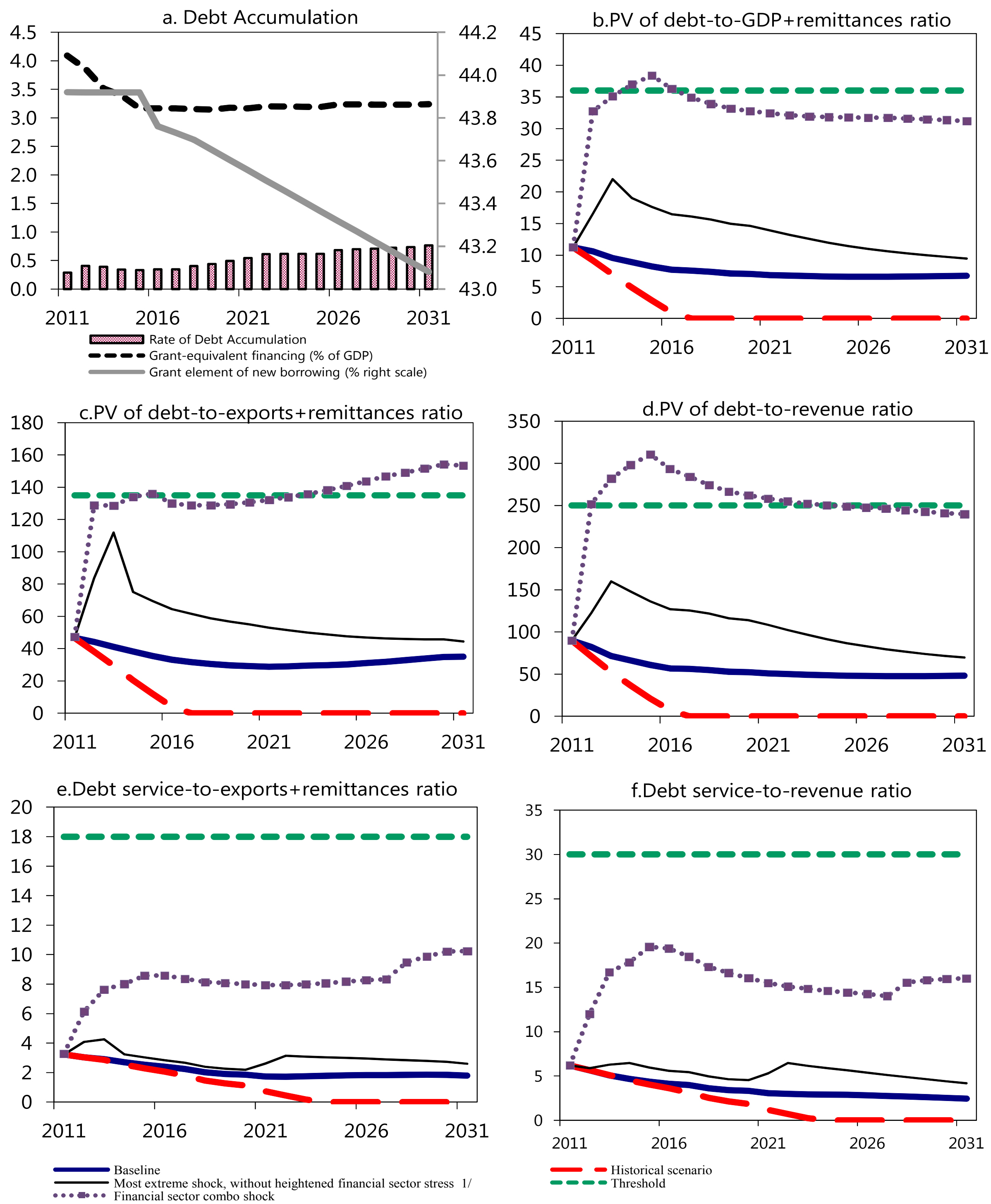
3/ Exports values are assumed to remain permanently at the lower level, but the current account as a share of GDP is assumed to return to its baseline level after the shock (implicitly assuming an offsetting adjustment in import levels).

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.

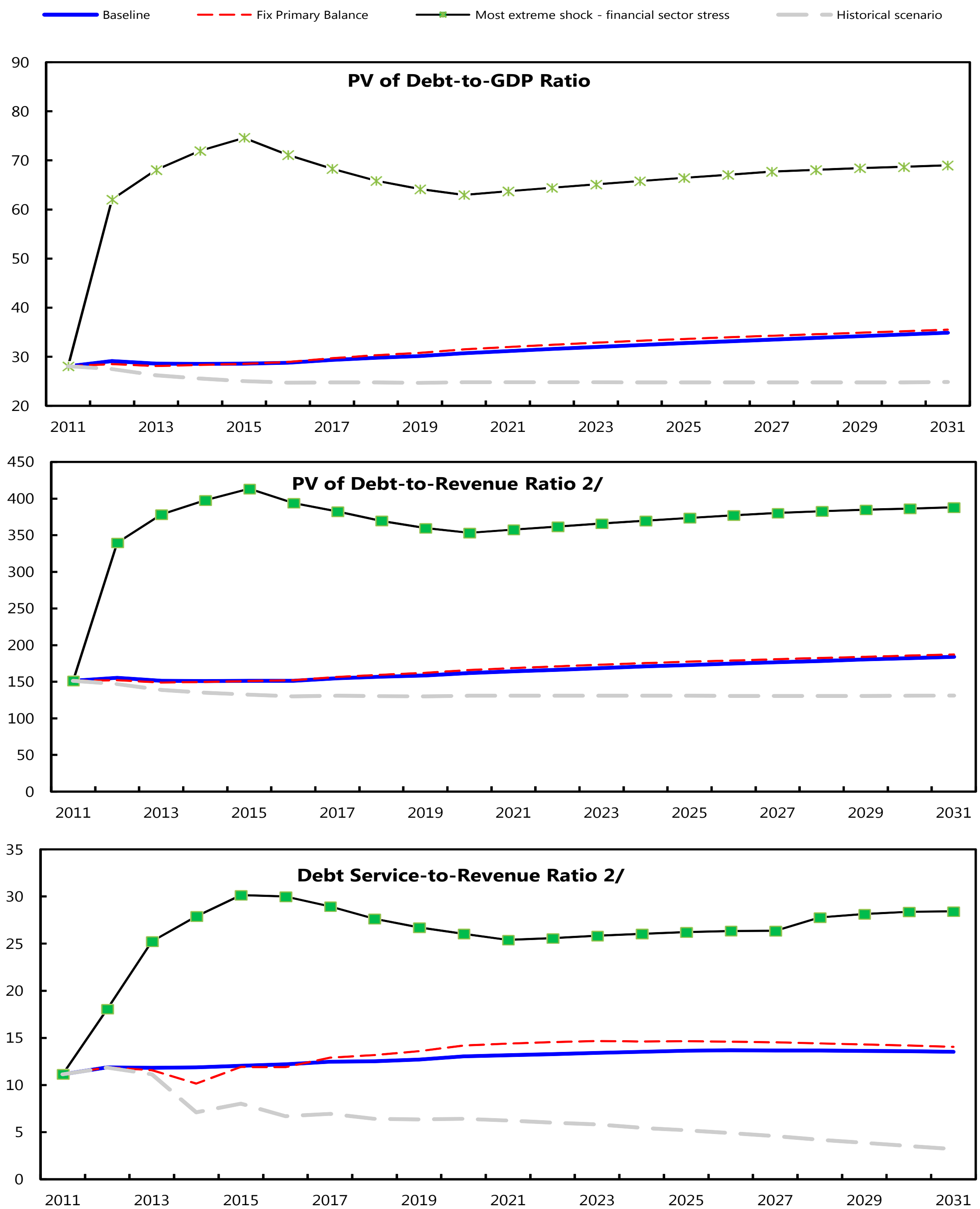
Figure 1. Nepal: Indicators of Public and Publicly Guaranteed External Debt Under Alternative Scenarios, 2011-2031 1/



Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in 2021. In figure b. it corresponds to a Combination shock; in c. to a Combination shock; in d. to a Combination shock; in e. to a Non-debt flows shock and in figure f. to a Combination shock

Figure 2. Nepal: Indicators of Public Debt Under Alternative Scenarios, 2011-2031 1/



Sources: Country authorities; and staff estimates and projections.
1/ The most extreme stress test is the test that yields the highest ratio in 2021.
2/ Revenues are defined inclusive of grants.