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NEPAL

STAFF REPORT FOR THE 2012 ARTICLE IV CONSULTATION—DEBT SUSTAINABILITY ANALYSIS

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Nepal remains at moderate risk of debt distress.[1] The baseline external public debt indicators show that external debt dynamics are sound and broadly resilient to standard stress tests. Nevertheless, under an alternative scenario reflecting systemic financial sector stress, external debt indicators breach the indicative thresholds, underscoring the pressing need to address financial sector vulnerabilities.[2] A prudent fiscal stance remains appropriate, and net domestic financing of deficits should be contained to around 2 percent of GDP in the near term. However, a marginal increase in net domestic financing (by less than ¾ percent of GDP) to finance much-needed capital spending could be warranted in the context of enhanced public financial management. In this vein, stronger efforts to improve the utilization of foreign aid, particularly grants, would mitigate pressures on the domestic debt market, while structural reforms to boost long-run growth and revenue generation would improve overall public debt sustainability.

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

[2] The thresholds are determined based on Nepal's policy performance rating, which is "medium" according to the CPIA score.

BACKGROUND

1. The total stock of public debt in Nepal remained stable at 33¼ percent of GDP by end-2011/12[3], the same level of 2010/11 and down from around 60 percent a decade ago, largely reflecting a prudent fiscal policy. External public debt stood at 20½ percent of GDP (US$ 3½ billion) by end-2011/12, rising from 18¾ percent of GDP due mainly to exchange rate depreciation against the U.S. dollar. The World Bank and Asian Development Bank (ADB) account for 83 percent of external debt, while Japan is the largest bilateral creditor accounting for 6¼ percent of total external debt. Domestic public debt stood at 12¾ percent of GDP by end-2011/12, compared to 14½ percent a year ago.

MACROECONOMIC ASSUMPTIONS

2. Macroeconomic assumptions are broadly similar to those of the previous DSA. Key differences include: (i) a higher path for fiscal revenue over the medium term (taking into account the strong reform momentum in this area); and (ii) a small narrowing of the external current account deficit, which to some extent reflects the correction of exchange rate overvaluation as a result of recent depreciation against the U.S. dollar (Box 1). Other assumptions are as follows:

Box 1. Macro Assumptions Comparison Table

	Previous DSA		Current DSA			Difference (current vs previous)	
	MT	LT	2012	MT	LT	MT	LT
Real growth (%)	3.8	4.0	4.6	4.0	4.0	0.2	0.0
Inflation (GDP deflator, %)	7.5	5.0	8.7	7.7	5.1	0.2	0.1
Revenue and grants(% GDP)	18.8	19.0	18.3	18.1	19.2	-0.7	0.2
Grants (% GDP)	3.0	2.6	2.6	2.1	1.8	-0.9	-0.8
Primary expenditure (% GDP)	20.9	21.0	18.7	19.3	21.3	-1.6	0.3
Primary deficit (% GDP)	2.1	2.0	0.4	1.2	2.1	-0.9	0.1
NDF (% GDP)	2.7	2.5	-0.1	2.3	2.7	-0.4	0.2
Exports of G&S (y/y growth)	7.3	7.0	11.7	7.7	7.1	0.4	0.1
Imports of G&S (y/y growth)	11.3	8.0	0.6	9.3	7.4	-2.0	-0.6
Remittances (y/y growth)	12.5	7.0	24.5	10.9	7.5	-1.6	0.5
Current account balance(% GDP)	-0.8	-2.6	4.7	-0.5	-0.5	0.3	2.1

Note: MT stands for medium term and reflects average over the next 5 years, and LT refers to long term and generally reflects indicators at the end of the projection period.

- **Real GDP growth is projected to slow to 3¾ percent in 2012/13 compared with 4½ percent in 2011/12, and then gradually accelerate to 4 percent in the medium term.** This short-term drop in growth reflects a softening global economic outlook, and particularly much slower activity in India. The medium term outlook would be supported by a gradual global

[3] The fiscal year ends on July 15.

recovery, enhanced political stability, and rising investment. Over the long run, resolution of such structural impediments as infrastructure would set growth on a higher sustainable path. Inflation is expected to decline to 8¼ percent in 2012/13 and further to 5 percent over the long run, assuming moderating external price pressures.

- **The exchange rate peg to the Indian rupee is assumed to remain at the current level over the projection period, and the external current account is projected to move from a small surplus in 2012/13 to moderate deficits over the medium and long term.** Remittance growth is projected to moderate to 7½ percent over the long run, largely reflecting a gradually slowing historical trend and economic prospects of migrant host countries.[4] Exports are hampered by structural bottlenecks as well as exchange rate overvaluation, and the ratio of exports to GDP is expected to further decline through the projection period reflecting weak competitiveness. Imports are largely driven by remittances, and thus would also decline in relation to GDP as remittances moderate. Both exports and imports are projected to grow by an annual average of 7–8 percent.

- **Fiscal policy is assumed to remain prudent, with net domestic financing (NDF) standing at 2¼ percent of GDP over the medium term, and at 2¾ percent of GDP in the long run.** Revenue and grants are projected to reach 17½ percent and 1¾ percent of GDP over the long run, respectively (compared with 15¾ percent and 2½ percent in 2011/12). Higher revenue is mainly attributable to improved tax administration and revenue policy, while lower grants are associated with the end of the peace process and an expected shift in donor financing from grants to concessional loans. On the expenditure side, current spending has been constrained and capital expenditures under-executed in 2011/12, leading to a lower projection of primary expenditures compared to the previous DSA. Assuming improved budget execution and higher capital spending, primary expenditures would stand at 21¼ percent over the long run. As a consequence, the primary deficit would stand at 2 percent of GDP in the long run (same as in the previous DSA) .

- **Concessionality of foreign loans is projected to decline gradually**. With rising per capita income and capital spending, new borrowings on relatively less favorable terms, for example, loans from non-traditional donors to finance hydropower projects, could become increasingly important. As a result, the assumed grant element (the measure of concessionality in this DSA exercise), would fall to 32½ percent by 2032.

[4] For empirical study, see "Remittances in South Asia and the Philippines: Determinants and Outlook", IMF Selected Issues Paper, 2009.

EXTERNAL DEBT SUSTAINABILITY

A. Baseline

3. Under baseline projections, Nepal's debt indicators remain below the indicative sustainability thresholds (Table 3b, Figure 1). As in the previous DSA, remittances are formally included in the analysis because the inflows (accounting for 23 percent of GDP) represent a sizeable and comparatively stable element of the balance of payments. Nevertheless, debt dynamics are also vulnerable to the potential volatility of remittances. The impact of a sharp slowdown in remittances is discussed below. With relatively conservative assumptions on growth and external borrowing, current projections indicate that the baseline debt ratios would remain sustainable over the long term.

B. Stress Tests and Alternative Scenarios

4. Nepal's debt dynamics remain generally sound under standard stress tests. Standard tests include shocks to GDP growth, exports, non-debt creating flows and combinations of these shocks, as well as a one-time 30 percent exchange rate depreciation. Nepal's debt indicators are below the sustainability thresholds under all but the most severe of these stress test scenarios. More specifically, Nepal's debt dynamics remain susceptible to shocks to remittance inflows. A substantial slowdown in remittances—reflected in a one standard deviation below average growth of non-debt creating flows in 2013 and 2014—would cause the "PV of external debt to export + remittance" ratio to exceed the indicative threshold by 10 percentage points in 2014.

5. Non-standard scenarios, based on Nepal-specific risks, highlight the financial sector fragilities as a key risk. Higher remittances have eased banks' liquidity situation in 2011/12, but heightened credit risk following the recent sharp downturn in real estate prices remains a key vulnerability. A hypothetical financial stress scenario mimics the shocks that could be triggered by a loss of confidence or a drop in remittances—leading to self-reinforcing feedback between deposit runs, capital flight, and a systemic financial sector stress. Under this scenario, the ratio of "PV of external debt-to-GDP+remittances" would rise substantially and stay above the threshold in 2015–2018, peaking in 2016 at 40½ percent; the PV of external debt-to-revenue ratio would be above the threshold across the whole projection period, and peak at 337¾ percent in 2013; and the debt service to revenue ratio would also be slightly above the threshold from 2016 onwards. (Figure 1).[5]

[5] Key assumptions include (i) a 50 percent loss of central bank foreign exchange reserves; (ii) a one-time exchange rate depreciation of 33 percent; (iii) an output loss of 30 percent over a 4 year horizon; and (iv) a fiscal cost (for bank resolution and deposit coverage) of 23 percent of GDP—presumably financed through domestic debt, but later replaced by foreign debt given the more favorable terms and the need to supplement depleted foreign exchange reserves.

PUBLIC DEBT SUSTAINABILITY

6. Under the baseline scenario, the PV of public debt would be moderately higher at the end of the projection period. As a share of GDP, the PV of public debt increases from 31 percent in 2012 to 37 by the end of the projection period. In percent of revenue and grants, the PV of public debt increases from 171 percent to 190 percent.

7. Although the total level of public debt remains broadly in the same margin, its composition is projected to shift toward domestic debt due to constraints on the capacity to mobilize external resources.[6] In the context of the current exchange rate peg, weak competitiveness and financial sector vulnerabilities, sizeable increases in public domestic debt could be increasingly difficult to accommodate. This could lead to higher real interest rates— potentially crowding out private sector credit—or requiring a tighter rein on primary fiscal expenditures which could endanger anti-poverty and development goals.

8. Stress tests suggest vulnerability to shocks. The largest adverse impact arises from the heightened financial stress scenario outlined above, which would raise the PV of debt to GDP ratio to over 90 percent. Among the standard stress tests, the largest impact on public debt arises from an increase in other debt-creating flows by 10 percent of GDP, which would increase the PV of debt-to-GDP by more than 9 percentage points and leave it at higher levels for a prolonged period.

9. Contingent liabilities arising from, inter alia, the SOE sector and pension scheme could pose risks to this assessment. NOC and NEA are making substantial losses, and hold domestic debt arrears equivalent to 5¾ percent of GDP, with the majority owed to fiscal or quasi-fiscal agencies.[7] Meanwhile, the on-budget pension scheme has no independent source of funding (such as employee contributions), and could over time cause the fiscal stance to deteriorate. Limited information on the pension scheme impedes a reliable estimate of the financing needs in the periods ahead and their potential impact on debt dynamics. The clearance of SOE arrears would presumably be based on first introducing an automatic fuel pricing mechanism supplemented by a social protection scheme, the cost of which depends on the program design.

AUTHORITIES' VIEWS

10. The authorities concurred with the DSA and its policy messages. They are aware of the risk to debt dynamics posed by financial sector stress and other contingent liabilities. Meanwhile, they recognize the need to improve utilization of donors' resources to curb the increase in domestic debt and commit to contain net domestic financing to 2 percent of GDP in 2012/13. However, they stress that systemic financial sector stress is not very likely and the chunk of the banking sector is generally sound though weaknesses

[6] Domestic debts include T-bills, development bonds, overdraft from the Nepal Rastra Bank, etc. The maturity of T-bills ranges from 28 days to a year, with T-bills of 91 days most actively traded.

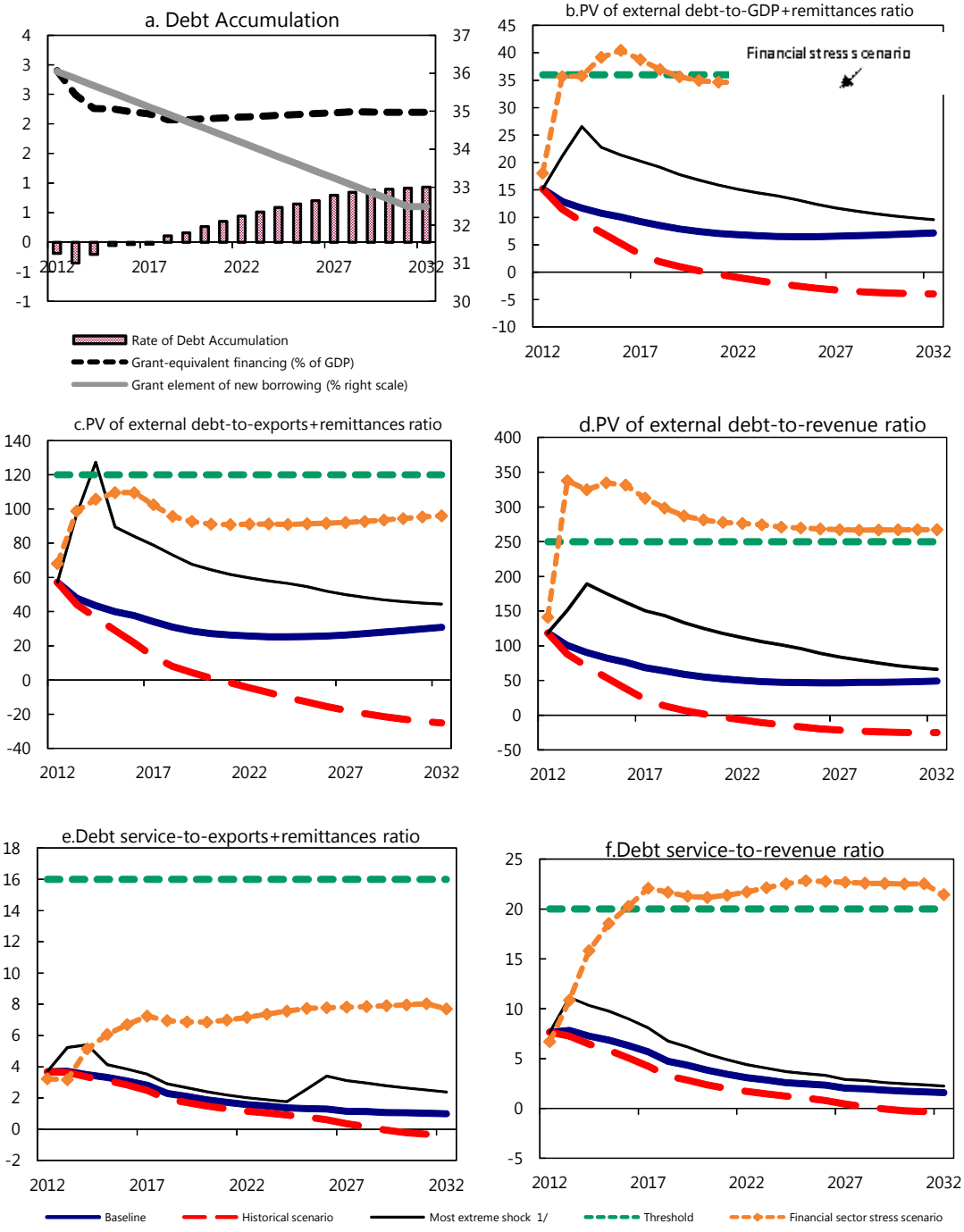
[7] NOC is Nepal Oil Corporation; NEA is Nepal Electricity Authority.

concentrate in a few smaller banks and financial companies. They also argue that foreign grants would be stronger than staff projection given the sizable commitments.

CONCLUSION

11. Nepal faces a moderate risk of external public debt distress but risks could arise from financial sector vulnerabilities, a shock to remittances, or quasi-fiscal liabilities. Although external debt burden indicators generally do not breach the thresholds in both baseline scenario and stress tests, under a heightened financial stress scenario, the debt burden rises notably, with external debt breaching thresholds for prolonged periods. This test stresses the need to urgently address financial sector weaknesses via in-depth reforms. The analysis also suggests that contingent liabilities from SOEs and the pension scheme could pose additional risks to debt dynamics. This highlights the importance of containing net domestic financing of deficits to around 2 percent of GDP in the near term that would create space for contingent liabilities, though there is marginal room to accommodate additional capital spending in case it is strengthened via enhanced public financial management.

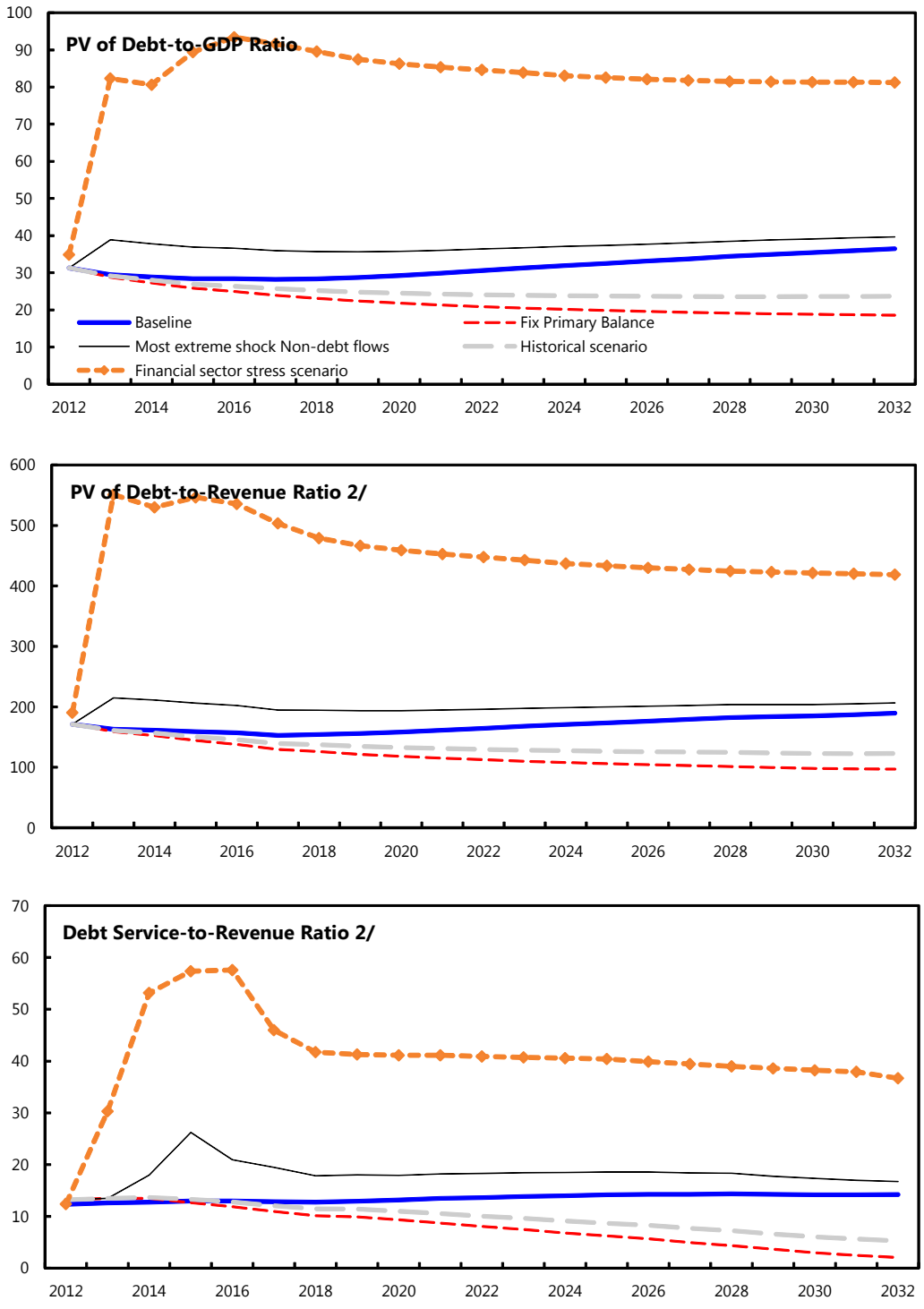
Figure 1. Nepal: Indictors of Public and Publicly Guaranteed External Debt Under Alternative Scenarios, 2012–2032 1/



Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in 2022. In figure b. it corresponds to a Non-debt flows shock; in c. to a Combination shock; in d. to a Non-debt flows shock; in e. to a Combination shock and in figure f. to a Financial sector stress scenario shock

Figure 2. Nepal: Indicators of Public Debt Under Alternative Scenarios, 2012–2032 1/



Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in 2022.

2/ Revenues are defined inclusive of grants.

Table 1a.Nepal: Public Sector Debt Sustainability Framework, Baseline Scenario, 2009-2032
(In percent of GDP, unless otherwise indicated)

	Actual					Estimate	Projections								
	2009	2010	2011	Average 5/	Standard Deviation 5/	2012	2013	2014	2015	2016	2017	2012-17 Average	2022	2032	2018-32 Average
Public sector debt 1/	39.3	35.4	33.3			33.3	31.3	30.7	30.4	30.5	30.4		32.9	39.5	
o/w foreign-currency denominated	26.3	22.1	18.7			20.5	17.7	16.3	15.2	14.5	13.6		10.7	11.6	
Change in public sector debt	-1.9	-3.9	-2.1			0.0	-2.0	-0.6	-0.3	0.1	-0.2		0.7	0.5	
Identified debt-creating flows	-0.7	-5.9	-3.5			1.7	-1.9	-0.6	-0.4	0.0	-0.3		0.5	0.3	
Primary deficit	2.2	0.9	1.1	0.8	1.0	0.4	1.1	1.3	1.5	1.5	1.4	1.2	2.1	2.1	2.0
Revenue and grants	16.8	18.0	17.7			18.3	18.1	17.9	17.9	18.1	18.5		18.6	19.2	
of which: grants	2.7	3.2	3.3			2.6	2.3	2.0	1.9	1.9	1.9		1.8	1.8	
Primary (noninterest) expenditure	19.0	19.0	18.7			18.7	19.2	19.2	19.4	19.6	19.9		20.7	21.3	
Automatic debt dynamics	-3.1	-6.9	-4.5			1.3	-2.9	-1.8	-1.7	-1.2	-1.5		-1.3	-1.6	
Contribution from interest rate/growth differential	-2.9	-2.8	-1.9			-1.7	-1.2	-1.2	-1.3	-1.2	-1.1		-1.0	-1.2	
of which: contribution from average real interest rate	-1.1	-1.0	-0.6			-0.2	0.0	-0.1	-0.1	0.0	0.1		0.3	0.3	
of which: contribution from real GDP growth	-1.8	-1.8	-1.3			-1.5	-1.2	-1.2	-1.1	-1.2	-1.2		-1.2	-1.5	
Contribution from real exchange rate depreciation	-0.2	-4.1	-2.6			3.0	-1.7	-0.6	-0.5	0.0	-0.4		...	...	
Other identified debt-creating flows	0.2	0.1	0.0			-0.1	-0.1	-0.2	-0.2	-0.2	-0.2		-0.3	-0.2	
Privatization receipts (negative)	0.2	0.1	0.0			-0.1	-0.1	-0.2	-0.2	-0.2	-0.2		-0.3	-0.2	
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	-1.2	2.0	1.3			-1.7	0.0	0.0	0.1	0.1	0.1		0.2	0.2	
Other Sustainability Indicators															
PV of public sector debt	...	...	31.7			31.3	29.5	28.9	28.4	28.4	28.2		30.6	36.5	
o/w foreign-currency denominated	...	...	17.0			18.6	15.9	14.4	13.2	12.4	11.4		8.4	8.6	
o/w external	...	...	17.0			18.6	15.9	14.4	13.2	12.4	11.4		8.4	8.6	
PV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...	
Gross financing need 2/	6.0	4.4	4.8			3.9	4.5	4.8	5.2	5.2	5.2		6.6	7.3	
PV of public sector debt-to-revenue and grants ratio (in percent)	...	...	179.1			171.1	163.0	161.2	158.9	157.1	152.7		164.5	189.7	
PV of public sector debt-to-revenue ratio (in percent)	...	...	219.5			199.6	186.2	181.1	177.7	175.1	169.8		181.8	208.8	
o/w external 3/	...	...	118.1			118.5	100.3	90.5	82.6	76.6	68.7		50.2	49.3	
Debt service-to-revenue and grants ratio (in percent) 4/	16.2	13.2	14.5			12.3	12.6	12.8	13.0	13.0	12.8		13.6	14.2	
Debt service-to-revenue ratio (in percent) 4/	19.3	16.1	17.8			14.4	14.4	14.3	14.5	14.5	14.3		15.1	15.6	
Primary deficit that stabilizes the debt-to-GDP ratio	4.1	4.8	3.2			0.4	3.1	1.9	1.8	1.4	1.6		1.3	1.5	
Key macroeconomic and fiscal assumptions															
Real GDP growth (in percent)	4.5	4.8	3.9	3.8	1.6	4.6	3.8	3.9	3.9	4.0	4.0	4.0	4.0	4.0	4.0
Average nominal interest rate on forex debt (in percent)	0.9	1.0	0.9	1.0	0.0	1.9	2.0	2.0	1.9	1.9	1.9	1.9	1.4	0.8	1.2
Average real interest rate on domestic debt (in percent)	-9.0	-8.1	-3.5	-2.3	3.9	-2.4	-1.7	-1.5	-1.3	-0.4	0.4	-1.1	1.4	1.4	1.3
Real exchange rate depreciation (in percent, + indicates depreciation)	-0.8	-16.4	-12.5	-5.3	7.5	16.9	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	15.9	15.1	10.4	7.9	4.5	8.7	8.3	8.1	7.9	6.9	6.1	7.7	5.0	5.0	5.1
Growth of real primary spending (deflated by GDP deflator, in percent)	19.3	4.6	2.6	2.7	6.0	4.4	6.7	4.1	4.9	4.8	5.5	5.1	4.7	4.0	4.5
Grant element of new external borrowing (in percent)	...	...	...	...	...	36.0	35.9	35.7	35.5	35.3	35.1	35.6	34.2	32.5	...

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 2a.Nepal: Sensitivity Analysis for Key Indicators of Public Debt 2012-2032

	Projections							
	2012	2013	2014	2015	2016	2017	2022	2032
PV of Debt-to-GDP Ratio								
Baseline	31	30	29	28	28	28	31	36
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	31	29	28	27	26	26	24	24
A2. Primary balance is unchanged from 2012	31	29	27	26	25	24	21	19
A3. Permanently lower GDP growth 1/	31	30	29	29	29	29	34	47
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2013-2014	31	30	30	30	31	31	35	43
B2. Primary balance is at historical average minus one standard deviations in 2013-2014	31	30	30	29	29	29	31	37
B3. Combination of B1-B2 using one half standard deviation shocks	31	30	29	29	29	29	33	40
B4. One-time 30 percent real depreciation in 2013	31	36	35	34	34	33	34	38
B5. 10 percent of GDP increase in other debt-creating flows in 2013	31	39	38	37	37	36	36	40
PV of Debt-to-Revenue Ratio 2/								
Baseline	171	163	161	159	157	153	165	190
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	171	161	157	150	146	139	130	123
A2. Primary balance is unchanged from 2012	171	159	152	145	138	130	112	97
A3. Permanently lower GDP growth 1/	171	164	163	162	162	159	183	245
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2013-2014	171	166	169	169	170	167	189	226
B2. Primary balance is at historical average minus one standard deviations in 2013-2014	171	166	166	164	162	157	168	192
B3. Combination of B1-B2 using one half standard deviation shocks	171	165	163	162	162	159	176	207
B4. One-time 30 percent real depreciation in 2013	171	201	197	192	188	181	184	197
B5. 10 percent of GDP increase in other debt-creating flows in 2013	171	215	211	206	202	195	196	206
Debt Service-to-Revenue Ratio 2/								
Baseline	12	13	13	13	13	13	14	14
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	13	13	14	13	13	12	10	5
A2. Primary balance is unchanged from 2012	13	13	13	13	12	11	8	2
A3. Permanently lower GDP growth 1/	13	14	14	14	14	14	16	20
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2013-2014	13	14	14	15	15	15	17	19
B2. Primary balance is at historical average minus one standard deviations in 2013-2014	13	13	14	15	15	14	15	15
B3. Combination of B1-B2 using one half standard deviation shocks	13	14	14	14	14	14	15	16
B4. One-time 30 percent real depreciation in 2013	13	15	17	17	17	17	17	17
B5. 10 percent of GDP increase in other debt-creating flows in 2013	13	13	18	26	21	19	18	17

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.: External Debt Sustainability Framework, Baseline Scenario, 2009-2032 1/
(In percent of GDP, unless otherwise indicated)

	Actual			Historical 6/ Average	Standard 6/ Deviation	Projections									
	2009	2010	2011			2012	2013	2014	2015	2016	2017	2012-2017 Average	2022	2032	2018-203 Average
External debt (nominal) 1/	**26.3**	**22.1**	**18.7**			**20.5**	**17.7**	**16.3**	**15.2**	**14.5**	**13.6**		**10.7**	**11.6**	
o/w public and publicly guaranteed (PPG)	26.3	22.1	18.7			20.5	17.7	16.3	15.2	14.5	13.6		10.7	11.6	
Change in external debt	-2.0	-4.2	-3.4			1.9	-2.9	-1.4	-1.1	-0.7	-1.0		-0.3	0.2	
Identified net debt-creating flows	-5.0	-3.0	-3.0			-6.1	-1.8	-0.9	-0.6	-0.4	0.0		-0.9	-0.6	
Non-interest current account deficit	**-4.4**	**2.2**	**0.8**	**-2.0**	**2.2**	**-5.0**	**-1.0**	**0.0**	**0.3**	**0.6**	**0.9**		**0.0**	**0.5**	0.3
Deficit in balance of goods and services	22.1	26.9	24.2			22.8	27.8	28.1	28.3	28.6	28.9		27.9	24.3	
Exports	12.3	9.6	9.0			9.8	9.6	9.6	9.6	9.6	9.6		8.9	7.4	
Imports	34.5	36.6	33.2			32.6	37.5	37.7	37.9	38.1	38.5		36.9	31.7	
Net current transfers (negative = inflow)	-25.1	-23.8	-22.7	-19.4	3.7	-26.7	-27.6	-27.0	-26.9	-26.9	-27.0		-27.2	-23.2	-25.9
o/w official	-2.5	-1.9	-1.7			-2.0	-1.7	-1.1	-1.1	-1.0	-1.0		-1.0	-1.1	
Other current account flows (negative = net inflow)	-1.4	-1.0	-0.7			-1.1	-1.1	-1.1	-1.1	-1.1	-0.9		-0.7	-0.6	
Net FDI (negative = inflow)	**-0.2**	**-0.2**	**-0.5**	**-0.1**	**0.2**	**-0.6**	**-0.5**	**-0.6**	**-0.6**	**-0.7**	**-0.7**		**-0.7**	**-0.7**	-0.7
Endogenous debt dynamics 2/	**-0.4**	**-4.9**	**-3.3**			**-0.5**	**-0.4**	**-0.3**	**-0.3**	**-0.3**	**-0.3**		**-0.3**	**-0.3**	
Contribution from nominal interest rate	0.3	0.2	0.2			0.3	0.4	0.3	0.3	0.3	0.3		0.1	0.1	
Contribution from real GDP growth	-1.3	-1.0	-0.7			-0.8	-0.7	-0.6	-0.6	-0.6	-0.5		-0.4	-0.4	
Contribution from price and exchange rate changes	0.6	-4.1	-2.8			...	...	...	...	...	...		...	...	
Residual (3-4) 3/	**3.0**	**-1.3**	**-0.4**			**8.0**	**-1.0**	**-0.5**	**-0.5**	**-0.3**	**-0.9**		**0.6**	**0.8**	
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/	...	...	17.0			18.6	15.9	14.4	13.2	12.4	11.4		8.4	8.6	
In percent of exports	...	...	190.0			189.9	164.8	150.2	138.3	130.0	118.3		94.6	116.5	
PV of PPG external debt	**...**	**...**	**17.0**			**18.6**	**15.9**	**14.4**	**13.2**	**12.4**	**11.4**		**8.4**	**8.6**	
In percent of exports	**...**	**...**	**190.0**			**189.9**	**164.8**	**150.2**	**138.3**	**130.0**	**118.3**		**94.6**	**116.5**	
In percent of government revenues	**...**	**...**	**118.1**			**118.5**	**100.3**	**90.5**	**82.6**	**76.6**	**68.7**		**50.2**	**49.3**	
Debt service-to-exports ratio (in percent)	**10.2**	**11.5**	**11.0**			**12.3**	**12.8**	**12.0**	**11.5**	**10.7**	**9.8**		**5.8**	**3.8**	
PPG debt service-to-exports ratio (in percent)	**10.2**	**11.5**	**11.0**			**12.3**	**12.8**	**12.0**	**11.5**	**10.7**	**9.8**		**5.8**	**3.8**	
PPG debt service-to-revenue ratio (in percent)	**8.9**	**7.5**	**6.9**			**7.6**	**7.8**	**7.3**	**6.9**	**6.3**	**5.7**		**3.1**	**1.6**	
Total gross financing need (Billions of U.S. dollars)	-0.4	0.5	0.2			-0.9	0.0	0.1	0.2	0.3	0.3		-0.1	0.0	
Non-interest current account deficit that stabilizes debt ratio	-2.4	6.4	4.2			-6.9	1.9	1.4	1.4	1.3	1.9		0.3	0.3	
Key macroeconomic assumptions															
Real GDP growth (in percent)	4.5	4.8	3.9	3.8	1.6	4.6	3.8	3.9	3.9	4.0	4.0	4.0	4.0	4.0	4.0
GDP deflator in US dollar terms (change in percent)	-2.0	18.4	14.5	8.4	6.5	-2.2	0.6	4.5	4.5	3.6	2.8	2.3	5.0	5.0	4.9
Effective interest rate (percent) 5/	0.9	1.0	0.9	1.0	0.0	1.9	2.0	2.0	1.9	1.9	1.9	1.9	1.4	0.8	1.2
Growth of exports of G&S (US dollar terms, in percent)	4.9	-3.3	10.8	2.9	20.6	11.7	2.8	8.2	8.1	7.9	7.7	7.7	7.2	7.1	7.2
Growth of imports of G&S (US dollar terms, in percent)	12.5	31.7	7.9	16.2	7.6	0.6	19.9	9.4	9.0	8.5	8.0	9.3	7.8	7.4	7.7
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	36.0	35.9	35.7	35.5	35.3	35.1	35.6	34.2	32.5	33.6
Government revenues (excluding grants, in percent of GDP)	14.2	14.8	14.4			15.7	15.8	15.9	16.0	16.2	16.6		16.8	17.5	17.0
Aid flows (in Billions of US dollars) 7/	0.4	0.9	0.8			0.6	0.6	0.6	0.6	0.7	0.7		1.0	2.5	
o/w Grants	0.3	0.5	0.6			0.5	0.5	0.4	0.5	0.5	0.5		0.7	1.8	
o/w Concessional loans	0.1	0.3	0.2			0.1	0.1	0.1	0.2	0.2	0.2		0.3	0.8	
Grant-equivalent financing (in percent of GDP) 8/	...	...	...			2.9	2.5	2.3	2.3	2.2	2.2		2.1	2.2	2.1
Grant-equivalent financing (in percent of external financing) 8/	...	...	...			85.2	85.5	81.0	77.5	77.9	79.2		75.7	70.9	73.9
Memorandum items:															
Nominal GDP (Billions of US dollars)	12.9	16.0	19.0			19.4	20.3	22.0	23.9	25.8	27.6		42.0	101.4	
Nominal dollar GDP growth	2.5	24.1	18.9			2.3	4.4	8.6	8.6	7.8	7.0	6.4	9.2	9.2	9.1
PV of PPG external debt (in Billions of US dollars)			3.3			3.2	3.2	3.1	3.1	3.1	3.1		3.5	8.7	
(PVt-PVt-1)/GDPt-1 (in percent)						-0.2	-0.4	-0.2	-0.1	0.0	0.0	-0.1	0.4	0.9	0.6
Gross workers' remittances (Billions of US dollars)	2.7	3.1	3.5			4.4	4.8	5.2	5.6	6.1	6.5		10.1	20.8	
PV of PPG external debt (in percent of GDP + remittances)	...	...	14.4			15.2	12.9	11.7	10.7	10.1	9.2		6.8	7.1	
PV of PPG external debt (in percent of exports + remittances)	...	...	61.6			57.2	47.8	43.5	40.0	37.6	34.2		25.6	30.9	
Debt service of PPG external debt (in percent of exports + remittances)	...	...	3.6			3.7	3.7	3.5	3.3	3.1	2.8		1.6	1.0	

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, 2012-2032
(In percent)

	Projections							
	2012	2013	2014	2015	2016	2017	**2022**	2032
PV of external debt-to-GDP+remittances ratio								
Baseline	15	13	12	11	10	9	**7**	7
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2012-2032 1/	15	11	9	7	5	3	**-1**	-4
A2. New public sector loans on less favorable terms in 2012-2032 2	15	13	12	11	11	10	**9**	11
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2013-2014	15	13	12	11	10	9	**7**	7
B2. Export value growth at historical average minus one standard deviation in 2013-2014 3/	15	14	14	13	12	12	**9**	8
B3. US dollar GDP deflator at historical average minus one standard deviation in 2013-2014	15	12	12	11	10	9	**7**	7
B4. Net non-debt creating flows at historical average minus one standard deviation in 2013-2014 4/	15	21	27	23	21	20	**15**	10
B5. Combination of B1-B4 using one-half standard deviation shocks	15	19	24	21	20	19	**14**	9
B6. One-time 30 percent nominal depreciation relative to the baseline in 2013 5/	15	17	15	14	13	12	**9**	9
PV of external debt-to-exports+remittances ratio								
Baseline	57	48	43	40	38	34	**26**	31
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2012-2032 1/	57	44	36	29	22	14	**-5**	-25
A2. New public sector loans on less favorable terms in 2012-2032 2	57	48	44	42	39	37	**32**	46
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2013-2014	57	47	43	39	36	34	**26**	31
B2. Export value growth at historical average minus one standard deviation in 2013-2014 3/	57	54	61	56	52	49	**37**	37
B3. US dollar GDP deflator at historical average minus one standard deviation in 2013-2014	57	47	43	39	36	34	**26**	31
B4. Net non-debt creating flows at historical average minus one standard deviation in 2013-2014 4/	57	104	130	85	80	75	**57**	41
B5. Combination of B1-B4 using one-half standard deviation shocks	57	97	127	90	84	79	**60**	44
B6. One-time 30 percent nominal depreciation relative to the baseline in 2013 5/	57	47	43	39	36	34	**26**	31
PV of external debt-to-revenue ratio								
Baseline	119	100	90	83	77	69	**50**	49
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2012-2032 1/	119	88	70	54	39	23	**-7**	-25
A2. New public sector loans on less favorable terms in 2012-2032 2	119	100	92	86	80	75	**63**	73
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2013-2014	119	100	92	84	76	69	**52**	51
B2. Export value growth at historical average minus one standard deviation in 2013-2014 3/	119	107	112	103	95	87	**64**	53
B3. US dollar GDP deflator at historical average minus one standard deviation in 2013-2014	119	97	90	82	75	68	**51**	50
B4. Net non-debt creating flows at historical average minus one standard deviation in 2013-2014 4/	119	151	189	176	163	151	**112**	66
B5. Combination of B1-B4 using one-half standard deviation shocks	119	139	175	162	150	139	**103**	63
B6. One-time 30 percent nominal depreciation relative to the baseline in 2013 5/	119	140	127	116	105	96	**71**	70

Table 3b.Nepal: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2012-2032 (continued)
(In percent)

Debt service-to-exports+remittances ratio								
Baseline	4	4	3	3	3	3	**2**	1
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2012-2032 1/	4	4	3	3	3	2	**1**	0
A2. New public sector loans on less favorable terms in 2012-2032 2	4	4	3	3	3	3	**2**	2
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2013-2014	4	4	3	3	3	3	**2**	1
B2. Export value growth at historical average minus one standard deviation in 2013-2014 3/	4	4	4	4	4	3	**2**	1
B3. US dollar GDP deflator at historical average minus one standard deviation in 2013-2014	4	4	3	3	3	3	**2**	1
B4. Net non-debt creating flows at historical average minus one standard deviation in 2013-2014 4/	4	5	5	4	4	3	**2**	2
B5. Combination of B1-B4 using one-half standard deviation shocks	4	5	5	4	4	4	**2**	2
B6. One-time 30 percent nominal depreciation relative to the baseline in 2013 5/	4	4	3	3	3	3	**2**	1
Debt service-to-revenue ratio								
Baseline	8	8	7	7	6	6	**3**	2
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2012-2032 1/	8	7	6	6	5	4	**2**	0
A2. New public sector loans on less favorable terms in 2012-2032 2	8	8	7	7	7	6	**4**	3
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2013-2014	8	8	7	7	6	6	**3**	2
B2. Export value growth at historical average minus one standard deviation in 2013-2014 3/	8	8	7	7	7	6	**3**	2
B3. US dollar GDP deflator at historical average minus one standard deviation in 2013-2014	8	8	7	7	6	6	**3**	2
B4. Net non-debt creating flows at historical average minus one standard deviation in 2013-2014 4/	8	8	8	8	7	7	**4**	4
B5. Combination of B1-B4 using one-half standard deviation shocks	8	8	7	7	7	6	**3**	3
B6. One-time 30 percent nominal depreciation relative to the baseline in 2013 5/	8	11	10	10	9	8	**4**	2
Memorandum item:								
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	33	33	33	33	33	33	**33**	33

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.