INTERNATIONAL MONETARY FUND

# NEPAL

## Joint IMF/World Bank Debt Sustainability Analysis

Prepared by the staffs of the World Bank and the International Monetary Fund

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*Nepal remains at moderate risk of debt distress. The risk rating is assessed using the Low-Income Country Debt Sustainability Analysis (LIC-DSA) framework and remittances have been incorporated given their importance in the economy[1]. Despite a better starting point compared to the previous DSA, the baseline is weaker due to a delayed impact of the global crisis, limited progress in addressing structural impediments, and financial sector vulnerabilities. In addition to standard stress tests, a financial stress scenario is generated to reflect financial vulnerabilities and the associated risks. Though debt dynamics are resilient to standard stress tests, debt indicators breach the thresholds for a sustained period under the financial stress scenario.*

*The results highlight the need to contain risks arising from financial vulnerabilities. As a consequence, the fiscal stance should remain tight in the short run, but could be more accommodative in the medium term to support economic growth provided the financial vulnerabilities are addressed. Moreover, stronger and more stable growth, combined with foreign financing at favorable terms, would help Nepal make progress toward achieving its MDG targets while containing risks to debt sustainability.*

## I. BACKGROUND

1. **Nepal's total public debt stock is estimated at 40 percent of GDP at end 2008/09 (in nominal terms), having declined from 64 percent of GDP in 2001/02**. In 2008/09, external public debt was US$3.4 billion (27 percent of GDP), of which about US$3.1 billion was owed to multilateral institutions, mostly IDA and the AsDB. The bilateral debt stock is estimated at US$ 0.3 billion, with Japan representing the largest creditor accounting for about three quarters. Domestic debt stood at around 13 percent of GDP, 4 percentage points lower than in 2001/02.

[1] The debt sustainability analysis is prepared together with the World Bank.

## II. MACROECONOMIC ASSUMPTIONS

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

- Real sector: Real GDP growth is projected to decline to 3 percent in 2009/10, pick up gradually to 4¾ percent over the medium term, and reach 5½ percent in the long run. The projections are weaker than those in the previous DSA on account of a delayed impact of the global crisis, limited progress in addressing structural impediments to growth, and financial sector vulnerabilities. Removing or alleviating these obstacles will require time but could set Nepal on a higher growth path. Inflation is assumed to be about 12 percent in 2009/10 and gradually decline to 5 percent over the medium term, in line with India's inflation projection and anticipating somewhat higher inflation in non-tradables as a result of remittances inflows. The exchange rate is assumed to remain pegged to the Indian rupee at the current level over the projection period.

- Fiscal sector: The revenue-to-GDP ratio is projected to rise gradually from 14½ percent in 2008/09 to 17 percent in 2020/21 as there is still room for revenue administration gains, stabilizing at that level thereafter. Official grants are projected to decline gradually from 4 percent of GDP in 2008/09 to 3 percent in 2014/15 as international assistance for the peace process unwinds. Expenditure as a share of GDP is projected to rise from 19¾ percent in 2008/09 to around 23½ percent in the medium term and beyond due to sound revenue performance and the need to improve capital spending. As a result, the overall fiscal deficit (including grants) is projected to rise gradually from 1½ percent of GDP in 2008/09 to 3½ percent of GDP in the medium term, consistent with stability in the public debt-to-GDP ratio. Net domestic financing is projected to increase from 1¾ percent of GDP in 2008/09 to about 2½ by 2014/15, stabilizing at that level thereafter.

- External sector: Exports of goods and services are projected to grow at an average of about 7 percent over the projection period supported by tourism and growth in partner countries. After growing by over 30 percent annually in the past few years, remittances are projected to slow and grow by an annual average of 12 percent over the medium term, and by about 8 percent thereafter[2]. Imports of goods and services are expected to grow by an average of about 8 percent over the projection period in

[2] The projection of remittances is based on empirical study by IMF staff, which shows that the key determinants of remittances are non-oil GDP growth of GCC countries and stock of migrant workers. Please refer to "Remittances in South Asia and the Philippines: Determinants and Outlook", Almekinders and Abenoja (2009). In practice, however, additional factors such as host country immigration policy and migrants' confidence in Nepal's economy might also matter.

line with economic activity and remittances. As a consequence, the current account balance is projected to shift from a small surplus in previous years to a deficit of 2 percent of GDP in 2009/10, and gradually move close to balance in the long run.

- Financial sector: The financial sector has overextended itself in recent years in an environment of loose monetary policy, weak supervision, and proliferation of financial institutions. Rapid credit growth has fueled asset price booms, rendering the banking system subject to significant credit and liquidity risks. Moreover, two state-controlled banks, accounting for one fifth of the system, are operating with significant negative capital. Stress tests combined with costs of financial crises in other countries suggest that contingent liabilities of a financial sector restructuring in Nepal could be in the order of 8–12 percent of GDP.[3]

- In sum, macroeconomic assumptions are weaker compared to the previous DSA, mainly due to a delayed impact of the global crisis, heightened banking sector weaknesses, and persistent structural impediments. Over the projection period, average GDP growth is projected at 5 percent compared to 5½ in the previous DSA. Average export growth is projected at 7 percent compared to 8 percent in the last DSA, while average import growth is expected to remain close to the estimated 8 percent in the last DSA.

- Consistent with the previous DSA, the grant element of new borrowing is projected to decline gradually as Nepal begins to develop its hydropower potential partly with commercial lenders, and new non-traditional donors increase assistance.

## III. External Debt Sustainability

### A. Baseline

3. **Remittances are formally included in the DSA**. In the previous DSA, remittances were not included in the estimate of the indicative thresholds. However, workers' remittances in Nepal[4] are relatively large in comparison to exports or GDP—equivalent to over 21 percent of GDP or three times the exports in 2008/09—and constitute a relatively stable source of foreign exchange inflows. Therefore, in line with recent guidelines[5], remittances are added to exports and GDP as denominators in the calculation of debt burden ratios.

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[3] See Selected Issues Paper, *An Analysis of Systemic Risks in Nepal's Banking Sector in the Wake of the Global Crisis.*

[4] Nepal is classified as a medium performer based on its three year average CPIA score during 2007–2009.

[5] In reference to "Staff Guidance Note on the Application of the Joint Bank-Fund Debt Sustainability Framework for Low-Income Countries" by the International Development Association and International Monetary Fund.

4. **Under the baseline, Nepal's external debt indicators are well below the indicative thresholds[6] (Table 3b and Figure 1)**. Long-term projections indicate that most ratios are set to improve: the PV of external public debt-to-GDP-and-remittances is projected to decline from 16 percent to 8 percent by 2029/30; the PV of external public debt-to-revenue is projected to fall from 119 percent to 57 percent; and PV of external public debt-to-exports-and-remittances ratio is projected to decline from 63 percent to 41 percent.

Nepal: Indicative External Debt Burden Indicators

| | Indicative Thresholds | Nepal: 2009/10 | Nepal: Projected average 2009/10-2029/30 |
|---|---|---|---|
| NPV of debt, in percent of | | | |
| exports and remittances | 135.0 | 63.3 | 41.3 |
| GDP and remittances | 36.0 | 16.0 | 10.3 |
| revenue | 250.0 | 119.4 | 74.8 |
| | | | |
| Debt service, in percent of | | | |
| exports and remittances | 18.0 | 4.3 | 2.7 |
| revenues | 30.0 | 8.2 | 4.9 |

## B. Stress Test and Alternative Scenario

5. **The DSA is resilient to standard stress tests**. The standard shocks include slower GDP growth, softer remittances and exports, lower US dollar GDP deflator and a one-time exchange rate depreciation.[6] Bound tests indicate that debt indicators do not breach the thresholds except that the PV of debt-to-export-and-remittance ratio exceed the threshold for one year only.

6. **The standard stress tests, however, do not capture Nepal's structural weaknesses, in particular the financial vulnerabilities and the associated risks and the country's dependence on remittances**. Weaker remittances inflows could trigger balance of payments shocks, expose banking sector weaknesses, impede growth, and exert pressures on the exchange rate. Hence, an alternative scenario that combines a slowdown in remittances and GDP growth, a 30 percent one-time exchange rate depreciation, and the potential cost of financial sector restructuring is also presented.[7] The potential net fiscal costs of a financial restructuring is estimated to be 8–12 percent of GDP. Under this scenario, the PV of debt-to-

[6] 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.

GDP-and-remittances ratio increases significantly, peaking at 47 percent in 2011/12 and staying above the threshold for seven consecutive years (Figure 1); the PV of debt-to-revenue ratio would breach the threshold for nine years, and PV of debt-to-exports-and-remittances for four years. Under this country-specific scenario, the liquidity indicators, such as debt service-to-revenue and debt-service-to-exports-and-remittances, remain below the thresholds.

## IV. Public Debt Sustainability

7. **Under the baseline scenario, the PV of public debt-to-GDP ratio declines slightly from 33 percent in 2009/10 to 31 percent by 2029/30 (Table 2a, Figure 2).** Over the same period, the PV of public debt-to-revenue ratio declines from 165 percent to 156 percent, and the public debt service-to-revenue ratio declines from 12¾ percent to 12¼ percent. Unlike the previous DSA that indicated further declines of these ratios, the current DSA expects them to generally stabilize as the debt level has declined and fiscal space has been created, which could accommodate a higher deficit. There is also room for a shift in the composition of public debt towards more domestic debt because of a fairly large financial sector and partially captive domestic market. The domestic component of public debt is projected to increase from 40 percent of the total in 2009/10 to 61 percent in 2029/30.

8. **Stress tests suggest vulnerabilities to shocks**. A shock modeled as real GDP growth at historical average minus one standard deviation in 2011–12 causes the PV of debt-to-GDP ratio to increase from 32½ percent in 2009/10 to 38¼ percent in 2029/30; the PV of debt-to-revenues ratio increases from 165 to 190½ percent; and the debt service-to-revenue ratio increases from 12¾ percent to 19½ percent. The most extreme stress test in the medium-term is a 10 percent of GDP increase in other debt-creating flows in 2011, which causes the PV of debt-to-GDP ratio to peak at 41½ percent in 2011 and stand at 37¾ percent in 2020, and the PV of debt-to-revenue ratio to peak at 207¾ percent in 2011 and stand at 190¼ percent in 2020.

## V. Authorities' View

9. **The authorities concurred with the overall assessment.** They pointed out that the inclusion of remittances in the analysis was highly appropriate given the important role they play in the economy. They acknowledged the vulnerabilities of the financial sector, and the associated risks to debt sustainability.

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[7] The shocks to GDP growth and current transfers are equivalent to the historical average minus one standard deviation in 2011/12. The shock to exchange rate is a one-time 30 percent nominal depreciation in 2011/12.

## VI. CONCLUSION

10. **Nepal's external debt dynamics are subject to a moderate risk of distress**. While with remittances formally included in the analysis, the baseline scenario is more favorable than previously and debt burden indicators are well below the indicative thresholds, heighted financial sector vulnerabilities and the potential fiscal costs of financial sector restructuring add considerable risks. Both the baseline scenario and standard stress tests indicate resilient debt dynamics in which debt indicators do not breach the thresholds on a sustained basis, but they are likely to underestimate debt distress as the financial sector vulnerabilities and associated risks are not captured.

11. **A country-specific scenario reflecting possible financial stress indicates sustained breach of the indicative debt thresholds.** The results highlight the weakness in debt dynamics associated with financial vulnerabilities, which, if they were to materialize, could bring about significant distress. As a consequence, Nepal's fiscal policy stance should remain tight in the short run, but could be more accommodative in the medium term to support economic growth while maintaining sound debt dynamics provided financial sector vulnerabilities are addressed. Moreover, stronger and more stable 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.

12. **A Fund-supported program may help reduce macroeconomic and financial vulnerabilities and the ensuing threats to debt dynamics.** The authorities have requested Fund financial support under the Rapid Credit Facility to support reserves as they implement policies to strengthen the financial sector and mitigate risks arising from the deceleration of remittance inflows. Such policies would reduce the risk of the alternative financial stress scenario materializing and thereby reduce threats to debt dynamics. Disbursement of Fund resources of SDR 28.5million (($43.1 million) would have little impact on the baseline scenario.

Table 1a.Nepal: Public Sector Debt Sustainability Framework, Baseline Scenario, 2007-2030
(In percent of GDP, unless otherwise indicated)

| | Actual | | | | | Estimate | Projections | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2007 | 2008 | 2009 | Average | Standard Deviation | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2010-15 Average | 2020 | 2030 | 2016-30 Average |
| **Public sector debt 1/** | 43.4 | 40.3 | 40.3 | | | 37.4 | 36.1 | 35.7 | 35.5 | 35.4 | 35.7 | | 36.1 | 35.2 | |
| o/w foreign-currency denominated | 30.2 | 27.4 | 27.0 | | | 23.8 | 21.7 | 20.3 | 19.2 | 18.2 | 17.4 | | 14.8 | 13.8 | |
| Change in public sector debt | -6.6 | -3.1 | 0.0 | | | -2.9 | -1.3 | -0.4 | -0.2 | -0.1 | 0.2 | | 0.0 | 0.1 | |
| Identified debt-creating flows | -7.0 | -1.2 | -3.2 | | | -2.6 | -0.4 | 0.1 | 0.2 | 0.3 | 0.5 | | 0.0 | 0.0 | |
| Primary deficit | 0.9 | 1.3 | -0.6 | 0.7 | 1.2 | 1.6 | 1.4 | 1.6 | 1.8 | 2.0 | 2.3 | 1.8 | 2.1 | 2.2 | 2.1 |
| Revenue and grants | 14.0 | 15.3 | 16.9 | | | 19.9 | 20.0 | 20.0 | 20.0 | 19.8 | 19.6 | | 19.9 | 20.0 | |
| *of which: grants* | 2.2 | 2.5 | 2.5 | | | 3.8 | 4.0 | 3.8 | 3.6 | 3.3 | 3.0 | | 3.0 | 3.0 | |
| Primary (noninterest) expenditure | 14.9 | 16.6 | 16.3 | | | 21.5 | 21.4 | 21.6 | 21.8 | 21.9 | 22.0 | | 22.0 | 22.2 | |
| Automatic debt dynamics | -7.9 | -2.5 | -2.6 | | | -4.2 | -1.9 | -1.5 | -1.6 | -1.8 | -1.8 | | -2.0 | -2.1 | |
| Contribution from interest rate/growth differential | -2.7 | -3.0 | -3.0 | | | -2.0 | -1.4 | -1.2 | -1.3 | -1.6 | -1.6 | | -1.6 | -1.7 | |
| *of which: contribution from average real interest rate* | -1.0 | -0.8 | -1.2 | | | -0.9 | 0.0 | 0.3 | 0.2 | 0.0 | 0.0 | | 0.1 | 0.1 | |
| *of which: contribution from real GDP growth* | -1.6 | -2.2 | -1.8 | | | -1.2 | -1.5 | -1.5 | -1.5 | -1.6 | -1.6 | | -1.7 | -1.8 | |
| Contribution from real exchange rate depreciation | -5.2 | 0.5 | 0.3 | | | -2.2 | -0.5 | -0.4 | -0.2 | -0.2 | -0.2 | | ... | ... | |
| Other identified debt-creating flows | 0.0 | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Privatization receipts (negative) | 0.0 | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Recognition of implicit or contingent liabilities | 0.0 | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Debt relief (HIPC and other) | 0.0 | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Other (specify, e.g. bank recapitalization) | 0.0 | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Residual, including asset changes | 0.3 | -1.9 | 3.2 | | | -0.2 | -0.9 | -0.5 | -0.4 | -0.4 | -0.3 | | 0.0 | 0.0 | |
| **Other Sustainability Indicators** | | | | | | | | | | | | | | | |
| **PV of public sector debt** | … | … | 35.0 | | | 32.9 | 32.5 | 32.4 | 32.5 | 32.5 | 32.8 | | 32.4 | 31.1 | |
| o/w foreign-currency denominated | … | … | 21.8 | | | 19.2 | 18.1 | 17.1 | 16.2 | 15.3 | 14.5 | | 11.2 | 9.7 | |
| o/w external | ... | ... | 21.8 | | | 19.2 | 18.1 | 17.1 | 16.2 | 15.3 | 14.5 | | 11.2 | 9.7 | |
| PV of contingent liabilities (not included in public sector debt) | ... | ... | ... | | | ... | ... | ... | ... | ... | ... | | ... | ... | |
| Gross financing need 2/ | 4.6 | 4.1 | 2.2 | | | 4.1 | 4.3 | 4.4 | 4.5 | 4.7 | 5.0 | | 4.7 | 4.6 | |
| PV of public sector debt-to-revenue and grants ratio (in percent) | … | … | 207.0 | | | 164.8 | 162.3 | 162.2 | 162.6 | 164.1 | 166.8 | | 163.1 | 155.6 | |
| PV of public sector debt-to-revenue ratio (in percent) | … | … | 243.1 | | | 203.9 | 202.9 | 200.2 | 198.3 | 196.8 | 196.9 | | 192.1 | 183.1 | |
| o/w external 3/ | … | … | 150.9 | | | 119.4 | 113.2 | 105.6 | 98.9 | 92.7 | 87.2 | | 66.3 | 56.9 | |
| Debt service-to-revenue and grants ratio (in percent) 4/ | 26.5 | 18.4 | 16.2 | | | 12.8 | 14.2 | 14.0 | 13.6 | 13.2 | 13.6 | | 13.2 | 12.2 | |
| Debt service-to-revenue ratio (in percent) 4/ | 31.4 | 22.0 | 19.0 | | | 15.8 | 17.7 | 17.3 | 16.6 | 15.9 | 16.0 | | 15.6 | 14.3 | |
| Primary deficit that stabilizes the debt-to-GDP ratio | 7.5 | 4.4 | -0.5 | | | 4.4 | 2.8 | 2.0 | 1.9 | 2.1 | 2.1 | | 2.0 | 2.1 | |
| **Key macroeconomic and fiscal assumptions** | | | | | | | | | | | | | | | |
| Real GDP growth (in percent) | 3.3 | 5.3 | 4.7 | 4.1 | 1.7 | 3.0 | 4.0 | 4.2 | 4.4 | 4.7 | 4.8 | 4.2 | 5.0 | 5.5 | 5.3 |
| Average nominal interest rate on forex debt (in percent) | 1.3 | 1.2 | 1.1 | 1.3 | 0.1 | 1.2 | 1.2 | 1.2 | 1.3 | 1.3 | 1.3 | 1.3 | 1.2 | 1.2 | 1.2 |
| Average real interest rate on domestic debt (in percent) | -2.8 | -2.4 | -7.3 | -0.6 | 3.3 | -6.2 | 0.8 | 2.2 | 1.8 | 0.9 | 0.9 | 0.1 | 1.0 | 1.0 | 1.0 |
| Real exchange rate depreciation (in percent, + indicates depreciation) | -15.4 | 1.8 | 1.3 | -2.0 | 5.9 | -8.3 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Inflation rate (GDP deflator, in percent) | 7.7 | 6.7 | 13.2 | 5.9 | 3.1 | 11.8 | 8.0 | 5.6 | 5.0 | 5.0 | 5.0 | 6.7 | 5.0 | 5.0 | 5.0 |
| Growth of real primary spending (deflated by GDP deflator, in percent) | 0.2 | 0.2 | 0.0 | 0.1 | 0.1 | 0.4 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| Grant element of new external borrowing (in percent) | ... | ... | ... | … | … | 43.9 | 43.9 | 43.8 | 43.8 | 43.8 | 43.7 | 43.8 | 43.6 | 43.2 | ... |

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 2010-2030

| | Projections | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2020 | 2030 |
| **PV of Debt-to-GDP Ratio** | | | | | | | | |
| **Baseline** | 33 | 32 | 32 | 32 | 33 | 33 | 32 | 31 |
| **A. Alternative scenarios** | | | | | | | | |
| A1. Real GDP growth and primary balance are at historical averages | 33 | 32 | 31 | 30 | 29 | 29 | 25 | 20 |
| A2. Primary balance is unchanged from 2010 | 33 | 33 | 32 | 32 | 32 | 32 | 29 | 26 |
| A3. Permanently lower GDP growth 1/ | 33 | 33 | 33 | 33 | 34 | 34 | 36 | 42 |
| **B. Bound tests** | | | | | | | | |
| B1. Real GDP growth is at historical average minus one standard deviations in 2011-2012 | 33 | 33 | 34 | 35 | 35 | 36 | 38 | 38 |
| B2. Primary balance is at historical average minus one standard deviations in 2011-2012 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 31 |
| B3. Combination of B1-B2 using one half standard deviation shocks | 33 | 33 | 33 | 33 | 33 | 34 | 35 | 35 |
| B4. One-time 30 percent real depreciation in 2011 | 33 | 41 | 41 | 40 | 40 | 39 | 36 | 32 |
| B5. 10 percent of GDP increase in other debt-creating flows in 2011 | 33 | 42 | 41 | 41 | 40 | 40 | 38 | 34 |
| **PV of Debt-to-Revenue Ratio 2/** | | | | | | | | |
| **Baseline** | 165 | 162 | 162 | 163 | 164 | 167 | 163 | 156 |
| **A. Alternative scenarios** | | | | | | | | |
| A1. Real GDP growth and primary balance are at historical averages | 165 | 159 | 155 | 151 | 148 | 145 | 122 | 98 |
| A2. Primary balance is unchanged from 2010 | 165 | 163 | 162 | 162 | 161 | 161 | 147 | 131 |
| A3. Permanently lower GDP growth 1/ | 165 | 163 | 164 | 166 | 169 | 173 | 181 | 206 |
| **B. Bound tests** | | | | | | | | |
| B1. Real GDP growth is at historical average minus one standard deviations in 2011-2012 | 165 | 166 | 170 | 173 | 177 | 183 | 188 | 190 |
| B2. Primary balance is at historical average minus one standard deviations in 2011-2012 | 165 | 165 | 166 | 166 | 167 | 170 | 165 | 157 |
| B3. Combination of B1-B2 using one half standard deviation shocks | 165 | 163 | 163 | 164 | 167 | 172 | 173 | 172 |
| B4. One-time 30 percent real depreciation in 2011 | 165 | 205 | 203 | 201 | 200 | 200 | 182 | 161 |
| B5. 10 percent of GDP increase in other debt-creating flows in 2011 | 165 | 208 | 207 | 203 | 204 | 204 | 190 | 169 |
| **Debt Service-to-Revenue Ratio 2/** | | | | | | | | |
| **Baseline** | 13 | 14 | 14 | 14 | 13 | 14 | 13 | 12 |
| **A. Alternative scenarios** | | | | | | | | |
| A1. Real GDP growth and primary balance are at historical averages | 13 | 14 | 14 | 11 | 10 | 8 | 1 | 0 |
| A2. Primary balance is unchanged from 2010 | 13 | 14 | 14 | 14 | 13 | 13 | 9 | 7 |
| A3. Permanently lower GDP growth 1/ | 13 | 14 | 14 | 14 | 14 | 15 | 17 | 23 |
| **B. Bound tests** | | | | | | | | |
| B1. Real GDP growth is at historical average minus one standard deviations in 2011-2012 | 13 | 14 | 14 | 15 | 16 | 17 | 19 | 20 |
| B2. Primary balance is at historical average minus one standard deviations in 2011-2012 | 13 | 14 | 14 | 15 | 15 | 15 | 14 | 12 |
| B3. Combination of B1-B2 using one half standard deviation shocks | 13 | 14 | 14 | 13 | 12 | 14 | 15 | 16 |
| B4. One-time 30 percent real depreciation in 2011 | 13 | 16 | 17 | 17 | 18 | 19 | 19 | 17 |
| B5. 10 percent of GDP increase in other debt-creating flows in 2011 | 13 | 14 | 17 | 45 | 17 | 34 | 16 | 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.: External Debt Sustainability Framework, Baseline Scenario, 2007-2030 1/
(In percent of GDP, unless otherwise indicated)

| | Actual | | | Historical 0 | Standard | Projections | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2007 | 2008 | 2009 | Average 0 | Deviation | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2010-2015 Average | 2020 | 2030 | 2016-2030 Average |
| **External debt (nominal) 1/** | **32.8** | **29.6** | **29.4** | | | **26.0** | **24.1** | **22.7** | **21.5** | **20.5** | **19.6** | | **16.8** | **15.4** | |
| o/w public and publicly guaranteed (PPG) | 30.2 | 27.4 | 27.0 | | | 23.8 | 21.7 | 20.3 | 19.2 | 18.2 | 17.4 | | 14.8 | 13.8 | |
| Change in external debt | -5.3 | -3.3 | -0.2 | | | -3.4 | -2.0 | -1.4 | -1.1 | -1.1 | -0.8 | | -0.4 | 0.0 | |
| Identified net debt-creating flows | -4.6 | -8.7 | -4.5 | | | 1.1 | -1.2 | -1.1 | -0.7 | -0.2 | 0.2 | | -1.4 | -1.5 | |
| **Non-interest current account deficit** | **-0.3** | **-3.0** | **-4.5** | **-3.3** | **1.5** | **1.8** | **-0.3** | **-0.1** | **0.3** | **0.9** | **1.2** | | **-0.3** | **-0.2** | 0.0 |
| Deficit in balance of goods and services | 20.4 | 19.3 | 22.5 | | | 28.6 | 27.8 | 28.5 | 29.3 | 30.0 | 30.4 | | 26.8 | 19.3 | |
| Exports | 13.9 | 12.0 | 12.6 | | | 10.3 | 10.4 | 10.4 | 10.3 | 10.1 | 9.9 | | 8.7 | 7.0 | |
| Imports | 34.3 | 31.3 | 35.1 | | | 38.9 | 38.2 | 38.9 | 39.6 | 40.1 | 40.3 | | 35.5 | 26.3 | |
| Net current transfers (negative = inflow) | -19.1 | -21.1 | -25.6 | -17.7 | 3.6 | -25.5 | -26.7 | -27.2 | -27.6 | -27.9 | -28.0 | | -26.3 | -19.1 | -23.8 |
| o/w official | -2.1 | -2.2 | -2.6 | | | -4.1 | -4.3 | -4.0 | -3.8 | -3.5 | -3.2 | | -3.1 | -3.0 | |
| Other current account flows (negative = net inflow) | -1.5 | -1.2 | -1.5 | | | -1.4 | -1.4 | -1.3 | -1.3 | -1.3 | -1.2 | | -0.8 | -0.4 | |
| **Net FDI (negative = inflow)** | **-0.1** | **0.0** | **-0.2** | **0.0** | **0.1** | **-0.2** | **-0.2** | **-0.3** | **-0.3** | **-0.4** | **-0.4** | | **-0.5** | **-0.7** | -0.6 |
| **Endogenous debt dynamics 2/** | **-4.3** | **-5.6** | **0.2** | | | **-0.4** | **-0.7** | **-0.7** | **-0.7** | **-0.7** | **-0.7** | | **-0.6** | **-0.6** | |
| Contribution from nominal interest rate | 0.4 | 0.3 | 0.3 | | | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.2 | | 0.2 | 0.2 | |
| Contribution from real GDP growth | -1.1 | -1.4 | -1.4 | | | -0.7 | -1.0 | -1.0 | -0.9 | -0.9 | -0.9 | | -0.8 | -0.8 | |
| Contribution from price and exchange rate changes | -3.6 | -4.4 | 1.3 | | | … | … | … | … | … | … | | … | … | |
| **Residual (3-4) 3/** | **-0.7** | **5.4** | **4.3** | | | **-4.5** | **-0.8** | **-0.3** | **-0.5** | **-0.9** | **-1.0** | | **1.0** | **1.5** | |
| 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/ | ... | ... | 24.2 | | | 21.5 | 20.4 | 19.4 | 18.5 | 17.6 | 16.7 | | 13.2 | 11.2 | |
| In percent of exports | ... | ... | 192.2 | | | 208.2 | 196.1 | 186.7 | 180.2 | 174.6 | 170.0 | | 152.5 | 160.7 | |
| **PV of PPG external debt** | **...** | **...** | **21.8** | | | **19.2** | **18.1** | **17.1** | **16.2** | **15.3** | **14.5** | | **11.2** | **9.7** | |
| **In percent of exports** | **...** | **...** | **172.9** | | | **186.4** | **173.7** | **164.3** | **157.7** | **151.9** | **147.3** | | **129.4** | **138.3** | |
| **In percent of government revenues** | **...** | **...** | **150.9** | | | **119.4** | **113.2** | **105.6** | **98.9** | **92.7** | **87.2** | | **66.3** | **56.9** | |
| **Debt service-to-exports ratio (in percent)** | **12.5** | **11.2** | **9.5** | | | **12.8** | **12.2** | **11.9** | **11.5** | **11.4** | **11.2** | | **8.3** | **6.9** | |
| **PPG debt service-to-exports ratio (in percent)** | **12.5** | **11.2** | **9.5** | | | **12.8** | **12.2** | **11.9** | **11.5** | **11.4** | **11.2** | | **8.3** | **6.9** | |
| **PPG debt service-to-revenue ratio (in percent)** | **14.7** | **10.5** | **8.3** | | | **8.2** | **8.0** | **7.6** | **7.2** | **6.9** | **6.6** | | **4.2** | **2.8** | |
| Total gross financing need (Billions of U.S. dollars) | 0.4 | 0.1 | -0.2 | | | 0.7 | 0.5 | 0.5 | 0.6 | 0.7 | 0.9 | | 0.6 | 0.9 | |
| Non-interest current account deficit that stabilizes debt ratio | 5.0 | 0.2 | -4.3 | | | 5.2 | 1.7 | 1.3 | 1.5 | 2.0 | 2.1 | | 0.0 | -0.1 | |
| **Key macroeconomic assumptions** | | | | | | | | | | | | | | | |
| Real GDP growth (in percent) | 3.3 | 5.3 | 4.7 | 4.1 | 1.7 | 3.0 | 4.0 | 4.2 | 4.4 | 4.7 | 4.8 | 4.2 | 5.0 | 5.5 | 5.3 |
| GDP deflator in US dollar terms (change in percent) | 10.5 | 15.7 | -4.2 | 4.8 | 6.5 | 13.3 | 2.1 | 2.8 | 2.9 | 2.9 | 3.5 | 4.6 | 5.0 | 5.0 | 4.9 |
| Effective interest rate (percent) 5/ | 1.3 | 1.2 | 1.1 | 1.3 | 0.1 | 1.2 | 1.2 | 1.2 | 1.3 | 1.3 | 1.3 | 1.3 | 1.2 | 1.2 | 1.2 |
| Growth of exports of G&S (US dollar terms, in percent) | 20.6 | 5.4 | 4.9 | 3.8 | 14.2 | -4.3 | 7.3 | 7.1 | 6.0 | 5.8 | 5.9 | 4.6 | 7.3 | 8.7 | 7.9 |
| Growth of imports of G&S (US dollar terms, in percent) | 27.8 | 11.2 | 12.5 | 11.4 | 10.9 | 29.3 | 4.2 | 9.2 | 9.4 | 9.3 | 8.8 | 11.7 | 7.3 | 7.5 | 7.3 |
| Grant element of new public sector borrowing (in percent) | ... | ... | ... | ... | ... | 43.9 | 43.9 | 43.8 | 43.8 | 43.8 | 43.7 | 43.8 | 43.6 | 43.2 | 43.5 |
| Government revenues (excluding grants, in percent of GDP) | 11.8 | 12.8 | 14.4 | | | 16.1 | 16.0 | 16.2 | 16.4 | 16.5 | 16.6 | | 16.9 | 17.0 | 16.9 |
| Aid flows (in Billions of US dollars) 7/ | 0.2 | 0.3 | 0.3 | | | 0.7 | 0.8 | 0.8 | 0.8 | 0.8 | 0.9 | | 1.4 | 4.0 | |
| o/w Grants | 0.2 | 0.3 | 0.3 | | | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | | 1.0 | 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 | 1.2 | |
| Grant-equivalent financing (in percent of GDP) 8/ | ... | ... | ... | | | 4.4 | 4.6 | 4.5 | 4.3 | 3.9 | 3.7 | | 3.7 | 3.8 | 3.8 |
| Grant-equivalent financing (in percent of external financing) 8/ | ... | ... | ... | | | 85.7 | 84.8 | 84.2 | 83.6 | 82.6 | 80.6 | | 79.6 | 78.0 | 79.1 |
| *Memorandum items:* | | | | | | | | | | | | | | | |
| Nominal GDP (Billions of US dollars) | 10.3 | 12.6 | 12.6 | | | 14.7 | 15.6 | 16.8 | 18.0 | 19.4 | 21.1 | | 33.9 | 93.1 | |
| Nominal dollar GDP growth | 14.2 | 21.8 | 0.2 | | | 16.7 | 6.2 | 7.2 | 7.5 | 7.8 | 8.4 | 9.0 | 10.3 | 10.8 | 10.4 |
| PV of PPG external debt (in Billions of US dollars) | | | 2.7 | | | 2.8 | 2.8 | 2.8 | 2.9 | 2.9 | 3.0 | | 3.8 | 9.0 | |
| (PVt-PVt-1)/GDPt-1 (in percent) | | | | | | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.4 | 0.3 | 0.7 | 1.0 | 0.8 |
| Gross remittances (Billions of US dollars) | 1.5 | 2.1 | 2.7 | | | 3.0 | 3.3 | 3.7 | 4.1 | 4.6 | 5.1 | | 7.8 | 15.4 | |
| PV of PPG external debt (in percent of GDP + remittances) | ... | ... | 17.9 | | | 16.0 | 14.9 | 14.0 | 13.2 | 12.4 | 11.7 | | 9.1 | 8.3 | |
| PV of PPG external debt (in percent of exports + remittances) | ... | ... | 63.8 | | | 63.3 | 57.1 | 52.4 | 48.8 | 45.4 | 42.6 | | 35.2 | 41.1 | |
| Debt service of PPG external debt (in percent of exports + remittances) | ... | ... | 3.5 | | | 4.3 | 4.0 | 3.8 | 3.6 | 3.4 | 3.2 | | 2.3 | 2.0 | |

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, 2010-2030
(In percent)

| | Projections | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | **2020** | 2030 |
| **PV of debt-to-GDP+remittances ratio** | | | | | | | | |
| **Baseline** | 16 | 15 | 14 | 13 | 12 | 12 | **9** | 8 |
| **A. Alternative Scenarios** | | | | | | | | |
| A1. Key variables at their historical averages in 2010-2030 1/ | 16 | 13 | 11 | 8 | 6 | 3 | 0 | 0 |
| A2. New public sector loans on less favorable terms in 2010-2030 2 | 16 | 15 | 15 | 14 | 14 | 13 | **12** | 14 |
| A3. Financial Sector Stress Scenario | 16 | 35 | 47 | 46 | 45 | 43 | 33 | 18 |
| **B. Bound Tests** | | | | | | | | |
| B1. Real GDP growth at historical average minus one standard deviation in 2011-2012 | 16 | 15 | 14 | 13 | 13 | 12 | **9** | 8 |
| B2. Export value growth at historical average minus one standard deviation in 2011-2012 3/ | 16 | 16 | 16 | 15 | 14 | 13 | **10** | 9 |
| B3. US dollar GDP deflator at historical average minus one standard deviation in 2011-2012 | 16 | 15 | 15 | 14 | 13 | 12 | **10** | 9 |
| B4. Net non-debt creating flows at historical average minus one standard deviation in 2011-2012 4/ | 16 | 23 | 29 | 25 | 24 | 22 | **17** | 11 |
| B5. Combination of B1-B4 using one-half standard deviation shocks | 16 | 23 | 29 | 26 | 24 | 23 | **17** | 11 |
| B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/ | 16 | 19 | 18 | 17 | 16 | 15 | **12** | 11 |
| **PV of debt-to-exports+remittances ratio** | | | | | | | | |
| **Baseline** | 63 | 57 | 52 | 49 | 45 | 43 | **35** | 41 |
| **A. Alternative Scenarios** | | | | | | | | |
| A1. Key variables at their historical averages in 2010-2030 1/ | 63 | 50 | 40 | 31 | 21 | 12 | 0 | 0 |
| A2. New public sector loans on less favorable terms in 2010-2030 2 | 63 | 58 | 55 | 52 | 50 | 48 | **47** | 67 |
| A3. Financial Sector Stress Scenario | 63 | 115 | 154 | 149 | 145 | 139 | 112 | 77 |
| **B. Bound Tests** | | | | | | | | |
| B1. Real GDP growth at historical average minus one standard deviation in 2011-2012 | 63 | 56 | 52 | 48 | 45 | 42 | **35** | 41 |
| B2. Export value growth at historical average minus one standard deviation in 2011-2012 3/ | 63 | 63 | 67 | 62 | 58 | 54 | **44** | 47 |
| B3. US dollar GDP deflator at historical average minus one standard deviation in 2011-2012 | 63 | 56 | 52 | 48 | 45 | 42 | **35** | 41 |
| B4. Net non-debt creating flows at historical average minus one standard deviation in 2011-2012 4/ | 63 | 117 | 147 | 92 | 87 | 81 | **66** | 53 |
| B5. Combination of B1-B4 using one-half standard deviation shocks | 63 | 114 | 150 | 96 | 89 | 84 | **68** | 54 |
| B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/ | 63 | 56 | 52 | 48 | 45 | 42 | **35** | 41 |
| **PV of debt-to-revenue ratio** | | | | | | | | |
| **Baseline** | 119 | 113 | 106 | 99 | 93 | 87 | **66** | 57 |
| **A. Alternative Scenarios** | | | | | | | | |
| A1. Key variables at their historical averages in 2010-2030 1/ | 119 | 98 | 79 | 60 | 41 | 23 | 0 | 0 |
| A2. New public sector loans on less favorable terms in 2010-2030 2 | 119 | 115 | 110 | 106 | 102 | 99 | **89** | 93 |
| A3. Financial Sector Stress Scenario | 119 | 262 | 357 | 347 | 337 | 323 | **239** | 122 |
| **B. Bound Tests** | | | | | | | | |
| B1. Real GDP growth at historical average minus one standard deviation in 2011-2012 | 119 | 113 | 108 | 101 | 94 | 89 | **68** | 58 |
| B2. Export value growth at historical average minus one standard deviation in 2011-2012 3/ | 119 | 118 | 122 | 114 | 107 | 101 | **76** | 59 |
| B3. US dollar GDP deflator at historical average minus one standard deviation in 2011-2012 | 119 | 116 | 113 | 106 | 99 | 93 | **71** | 61 |
| B4. Net non-debt creating flows at historical average minus one standard deviation in 2011-2012 4/ | 119 | 159 | 199 | 187 | 176 | 166 | **124** | 73 |
| B5. Combination of B1-B4 using one-half standard deviation shocks | 119 | 159 | 206 | 194 | 183 | 173 | **129** | 76 |
| B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/ | 119 | 158 | 148 | 138 | 129 | 121 | **93** | 80 |

Table 3b.Nepal: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2010-2030 (continued)
(In percent)

**Debt service-to-exports+remittances ratio**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Baseline** | 4 | 4 | 4 | 4 | 3 | 3 | **2** | 2 |
| **A. Alternative Scenarios** | | | | | | | | |
| A1. Key variables at their historical averages in 2010-2030 1/ | 4 | 4 | 4 | 3 | 3 | 3 | 2 | 0 |
| A2. New public sector loans on less favorable terms in 2010-2030 2 | 4 | 4 | 4 | 4 | 4 | 4 | **3** | 3 |
| A3. Financial Sector Stress Scenario | 4 | 5 | 5 | 6 | 6 | 5 | 4 | 5 |
| **B. Bound Tests** | | | | | | | | |
| B1. Real GDP growth at historical average minus one standard deviation in 2011-2012 | 4 | 4 | 4 | 4 | 3 | 3 | **2** | 2 |
| B2. Export value growth at historical average minus one standard deviation in 2011-2012 3/ | 4 | 4 | 4 | 4 | 4 | 4 | **3** | 2 |
| B3. US dollar GDP deflator at historical average minus one standard deviation in 2011-2012 | 4 | 4 | 4 | 4 | 3 | 3 | **2** | 2 |
| B4. Net non-debt creating flows at historical average minus one standard deviation in 2011-2012 4/ | 4 | 6 | 6 | 4 | 4 | 4 | **3** | 3 |
| B5. Combination of B1-B4 using one-half standard deviation shocks | 4 | 6 | 6 | 4 | 4 | 4 | **3** | 3 |
| B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/ | 4 | 4 | 4 | 4 | 3 | 3 | **2** | 2 |

**Debt service-to-revenue ratio**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Baseline** | 8 | 8 | 8 | 7 | 7 | 7 | **4** | 3 |
| **A. Alternative Scenarios** | | | | | | | | |
| A1. Key variables at their historical averages in 2010-2030 1/ | 8 | 8 | 7 | 6 | 6 | 5 | 3 | 0 |
| A2. New public sector loans on less favorable terms in 2010-2030 2 | 8 | 8 | 8 | 7 | 7 | 7 | **5** | 5 |
| A3. Financial Sector Stress Scenario | 8 | 11 | 13 | 13 | 13 | 12 | **8** | 8 |
| **B. Bound Tests** | | | | | | | | |
| B1. Real GDP growth at historical average minus one standard deviation in 2011-2012 | 8 | 8 | 8 | 7 | 7 | 7 | **4** | 3 |
| B2. Export value growth at historical average minus one standard deviation in 2011-2012 3/ | 8 | 8 | 8 | 8 | 7 | 7 | **4** | 3 |
| B3. US dollar GDP deflator at historical average minus one standard deviation in 2011-2012 | 8 | 8 | 8 | 8 | 8 | 7 | **5** | 3 |
| B4. Net non-debt creating flows at historical average minus one standard deviation in 2011-2012 4/ | 8 | 8 | 8 | 9 | 8 | 8 | **5** | 4 |
| B5. Combination of B1-B4 using one-half standard deviation shocks | 8 | 8 | 9 | 9 | 9 | 8 | **5** | 4 |
| B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/ | 8 | 11 | 11 | 10 | 10 | 9 | **6** | 4 |
| *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.

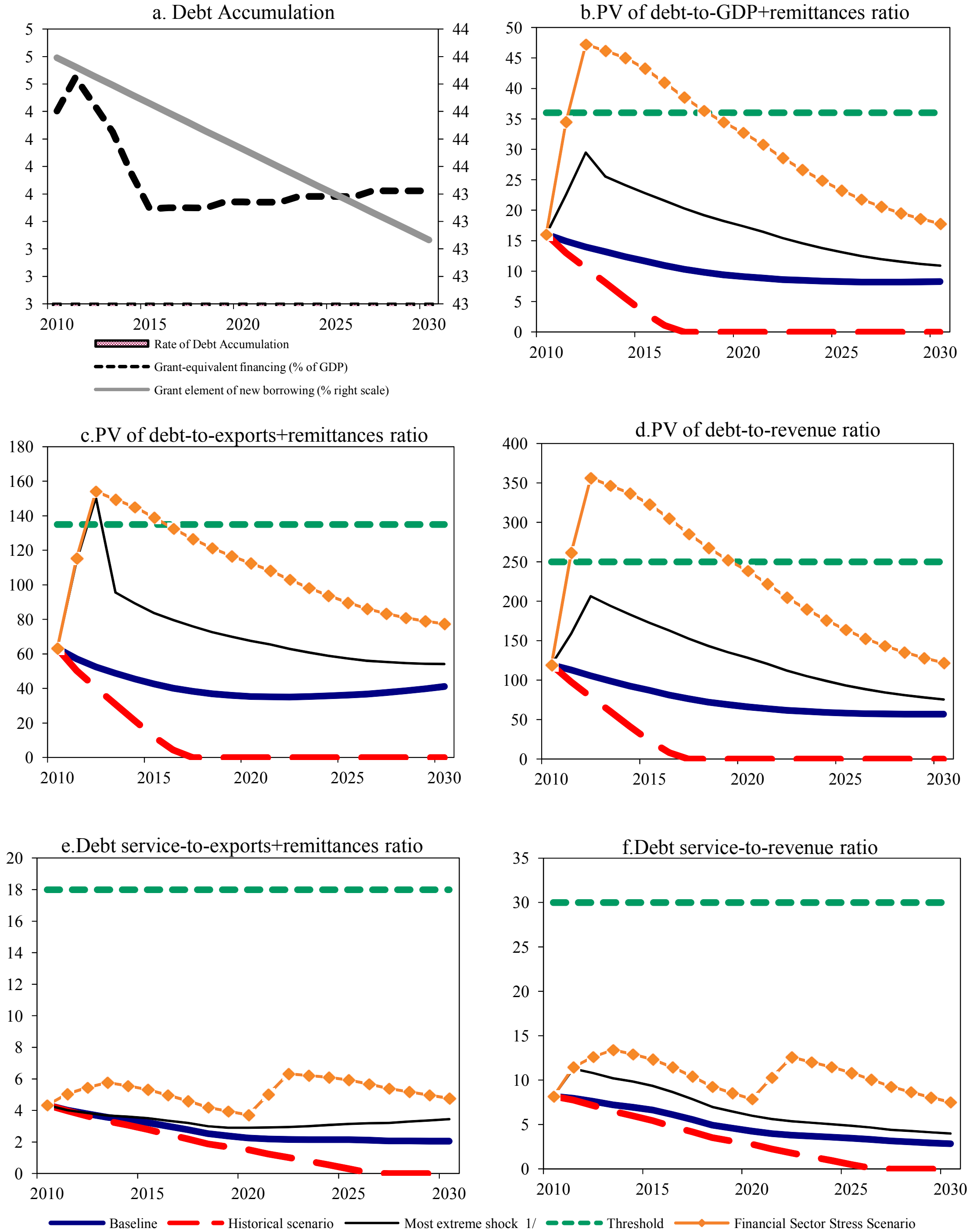
3/ Exports values are assumed to remain permanently at the lower level, but the current account as a share of GDP is assumed to return to its baseline level after the shock (implicitly assuming an offsetting adjustment in import levels).

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.

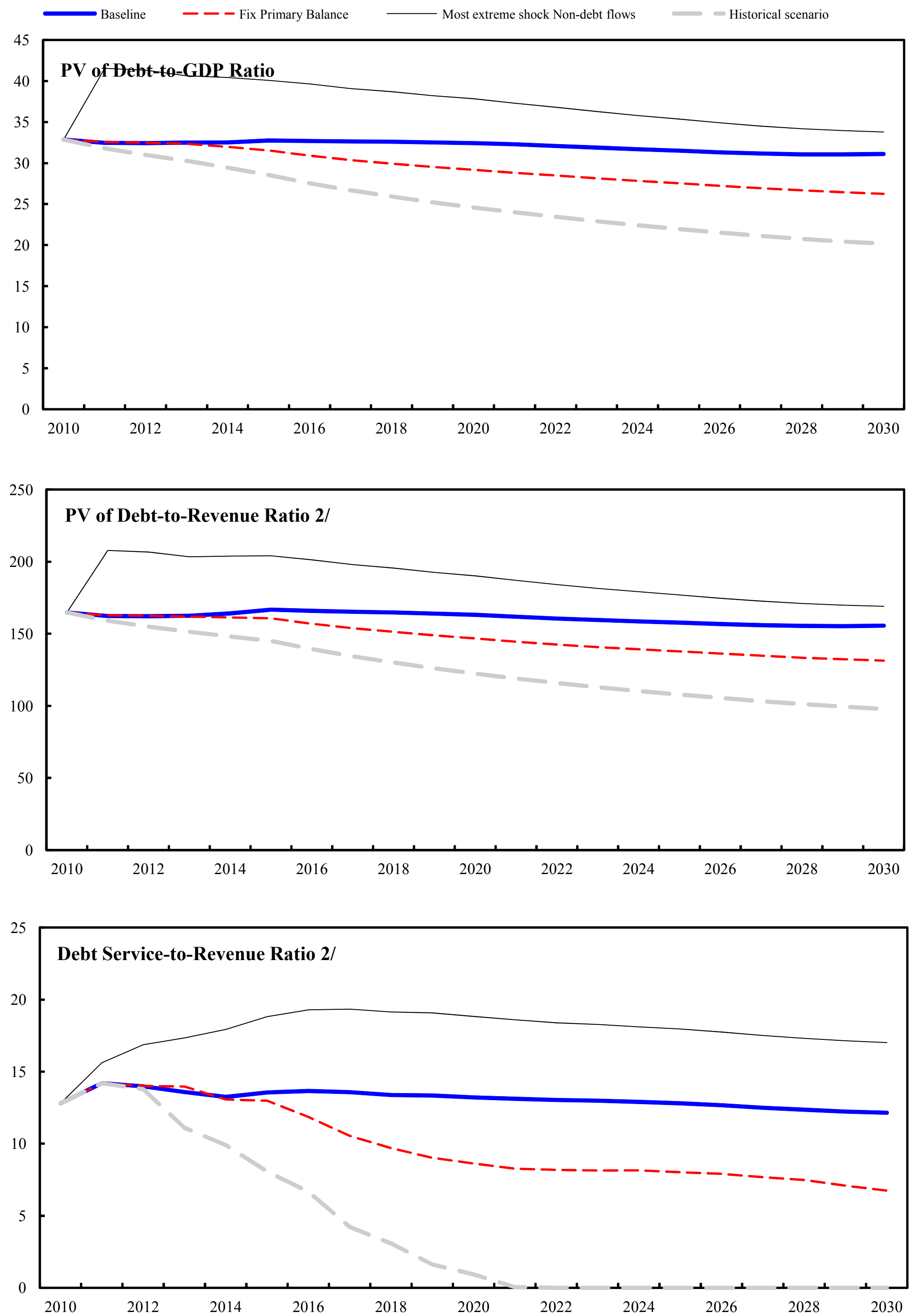
Figure 1. Nepal: Indicators of Public and Publicly Guaranteed External Debt under Alternative Scenarios, 2010-2030 1/




Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in 2020. 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 Terms shock and in figure f. to a One-time depreciation shock

Figure 2.Nepal: Indicators of Public Debt Under Alternative Scenarios, 2010-2030 1/




Sources: Country authorities; and staff estimates and projections.
1/ The most extreme stress test is the test that yields the highest ratio in 2020.
2/ Revenues are defined inclusive of grants.