

INTERNATIONAL MONETARY FUND AND
INTERNATIONAL DEVELOPMENT ASSOCIATION

CAMBODIA

Joint IMF/World Bank Debt Sustainability Analysis 2010¹

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

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This document presents the joint IMF-World Bank debt sustainability analysis (DSA) for Cambodia using the Debt Sustainability Framework (DSF) for Low-Income Countries (LICs).² It shows that Cambodia faces a moderate risk of debt distress. While external debt burden indicators do not breach the relevant policy-dependent indicative thresholds under the baseline scenario, the debt level is sensitive to shocks as indicated in standard bound tests.³ There are also considerable downside risks related to the uncertainty about a sustained global recovery, and possible contingent liabilities from infrastructure projects and the banking system. Moreover, increased borrowing over the next three years, as currently considered by the authorities, would reduce the scope for absorbing additional risks. All this underscores the need for a prudent borrowing strategy, underpinned by continued fiscal consolidation over the medium term, careful selection of investment projects to ensure they are growth-enhancing, and improvements in debt management capacity.

¹ This DSA was prepared jointly by the IMF and World Bank. Staffs also collaborated with the Asian Development Bank. Debt data for this exercise were provided by the Cambodian authorities and donor partners.

² See “Debt Sustainability in Low-Income Countries: Proposal for an Operational Framework and Policy Implications” (<http://www.imf.org/external/np/pdr/sustain/2004/020304.htm> and IDA/SECM2004/0035, 2/3/04) and “Debt Sustainability in Low-Income Countries: Further Considerations on an Operational Framework, Policy Implications” (<http://www.imf.org/external/np/pdr/sustain/2004/091004.htm> and IDA/SECM2004/0629, 9/10/04), “Applying the Debt Sustainability Framework for Low-Income Countries Post Debt Relief,” (www.imf.org/external/np/pp/eng/2006/110606.pdf and IDA/SecM2006-0564, 8/11/06), and “A Review of Some Aspects of the Low-Income Country Debt Sustainability Framework” (IDA/SecM2009-49870, 8/23/09 and <http://www.imf.org/external/np/pp/eng/2009/080509a.pdf>).

³ The low-income country debt sustainability framework (LIC DSF) recognizes that better policies and institutions allow countries to manage higher levels of debt, and thus the threshold levels for debt indicators are policy dependent. Cambodia’s policies and institutions, as measured by the World Bank’s Country Policy and Institutional Assessment (CPIA), averaged 3.26 over the past three years. Since this average exceeds the threshold of 3.25 for the first time only and the excess is marginal, the country remains classified as a “weak performer” for this fiscal year. The relevant indicative thresholds for this category are: 30 percent for the NPV of debt-to-GDP ratio, 100 percent for the NPV of debt-to-exports ratio, 200 percent for the NPV of debt-to-revenue ratio, 15 percent for the debt service-to-exports ratio, and 25 percent for the debt service-to-revenue ratio. These thresholds are applicable to public and publicly-guaranteed external debt.

I. INTRODUCTION

1. **Cambodia's DSA indicates that the risk of debt distress is moderate.** Under the baseline scenario, external debt burden indicators do not breach the relevant indicative thresholds. However, in standard alternative scenarios and stress tests, two debt indicators (debt-to-GDP and debt-to-revenue ratio) breach indicative thresholds for several years (Figure 1).

2. **Staffs have analyzed an additional country-specific alternative scenario of increased bilateral external borrowing over 2011–13.** This scenario is mainly for information purposes as the authorities inquired about the implications for fiscal sustainability of temporarily increasing their legal limit on new borrowing to finance more development projects. The legal limit on the new borrowing of SDR 200 million per year was already once relaxed temporarily in 2009 to weather the impact of global crisis. The government returned to the original borrowing limit in 2010. The terms of borrowing are assumed to be less concessional than those from multilateral donors, similar to China's terms (20-year maturity, 7-year grace period at 2 percent interest). The analysis indicates that Cambodia's scope for absorbing additional risks would be significantly reduced.

II. BACKGROUND AND ASSUMPTIONS

3. **At the end of 2009, Cambodia's external public and publicly-guaranteed (PPG) debt stock was around 28 percent of GDP in nominal terms and 22 percent in net present value (NPV) terms.**⁴ Until 2008, strong economic growth and favorable external conditions contributed to a decline in debt ratios. However, since 2009, the external PPG debt ratios have risen, partly reflecting increased assistance from existing and emerging donors in the face of the global recession. As a result, the PV of debt to revenue was around 189 percent, approaching the 200 percent threshold. For 2010, the debt stock in PV terms as a share of GDP, as a share of exports of goods and nonfactor services, and of government revenues is projected at 23 percent, 42 percent and 178 percent, respectively.

Cambodia: External Public Debt Indicators at End-2009		
	Indicative Thresholds	End-2009
NPV of debt, as a percent of:		
GDP	30	22
Exports	100	41
Revenue	200	189
Debt service, as a percent of:		
Exports	15	1
Revenue	25	5
Sources: Cambodian authorities; and IMF and World Bank staff estimates.		

⁴ Does not include debt of state-owned enterprises due to lack of data.

4. **Around half of Cambodia’s external debt is held by multilateral creditors,** primarily the Asian Development Bank (28 percent) and the World Bank’s International Development Association (17 percent). China is the largest emerging creditor, accounting for about 58 percent of total bilateral disbursements in 2010.

Cambodia: Stock of Public and Publicly-Guaranteed External Debt at End-2009		
	As a Share of Total External Debt	In percent of GDP
Total	100	28
Multilateral	52	15
Bilateral	48	13
<i>Of which: Nonrescheduled debt with the United States and Russian Federation</i>	26	7
Sources: Cambodian authorities; and IMF and World Bank staffs’ estimates.		

5. **Government deposits with the domestic banking system exceed the stock of loans from the banks to the government.** At the end of 2009, the stock of recorded domestic public debt was equivalent to slightly less than 1 percent of GDP, while government deposits amounted to about 5 percent of GDP.

6. **Cambodia remains in arrears to the Russian Federation and the United States.** Following a Paris Club agreement in 1995, Cambodia concluded agreements with France, Germany, Italy, and Japan. Negotiations of outstanding debt obligations with the Russian Federation and the United States are ongoing, with their status effectively unchanged since the last DSA. Currently, Cambodia is not servicing its debt with either of these creditors, and efforts to conclude agreements with each under the framework of the Paris Club are required. In September 2010, the Cambodian government announced it would demand cancellation of its debt to the United States. Since prospects for resolution are unclear, the current DSA assumes no restructuring in its baseline, with arrears continuing to build up throughout the projection period. In measuring debt levels, the DSA incorporates the negotiated debt stock for the Russian Federation (US\$457 million) and the agreed amount of the total principal owed to the United States (US\$162 million).⁵

7. **The main underlying macroeconomic assumptions are presented in Box 1.** The baseline scenario assumes a deficit reduction (excluding grants) by about 2½ percent of GDP between 2010 and 2015.

⁵ For this DSA, staffs continue to apply the standard 70 percent discount to the nominal value of debt owed to the Russian Federation.

Box 1: Main Assumptions for the Baseline Scenario (2010–30)

- **After a sharp slowdown in 2009, the Cambodian economy is expected to recover with real GDP growth at 4½–5 percent in 2010**, as garments exports, in particular to the U.S., and tourism activity normalize. However, construction is likely to remain sluggish given the ongoing need to repair balance sheets and unwind the excess from the pre-2008 local real estate boom. As a result, the economy will only gradually return to potential growth of about 6–7 percent. Important drivers of future growth will be new export opportunities in agri-business to markets in Asia as well as higher returns from tourism. Cambodia would continue to serve as a useful platform for China’s textile industry. All this will depend on improvements in the investment climate and recovery of FDI. Over the longer term, FDI is expected to be sustained at around 5–6 percent of GDP per year. Improvements in the domestic banking system would also result in increased domestic private investment. Inflation is projected to decline gradually from 4.5 percent in 2010 to around 3 percent over the medium term.
- **The external current account deficit** (including official transfers) is projected to widen in 2010 to around 9 percent of GDP, compared to 7 percent in 2009, as the recovery in garment exports and the tourism sector is more than offset by higher imports and increases in commodity prices. The macroeconomic framework incorporates recent projects in the power sector (some of which are already underway), which increases imports and FDI in the near term. However, over the medium and long term, growth in the import of petroleum products would decline, reflecting increases in the domestic power supply from hydropower plants. Over the longer term, the current account deficit is expected to settle in the range of 4–5 percent of GDP a year. Official assistance (grants and loans) would decline gradually as a share of GDP, while FDI and other private inflows would rise. Gross official reserves, which are expected to be around US\$2.6 billion (3.6 months of next year’s imports) at end-2010, would stabilize at around three months of imports with more stable import demand over the longer term.
- **Macroeconomic stability** is underpinned by a gradual consolidation from a sharp rise in the overall fiscal deficit in 2009. For 2010, the overall deficit is expected to decline to around 5.9 percent (excluding grants) from 8.1 percent in 2009 and lower domestic financing needs. Thereafter, the deficit is projected to decline gradually to around 3.4 percent by 2015. Revenue (excluding grants) would rise to around 15 percent of GDP by 2015 as a consequence of a broadening of the tax base, further administrative improvements, and buoyancy from the projected recovery, with more moderate increases thereafter (see accompanying 2010 Article IV staff report). Expenditures would decline to 18.2 percent of GDP by 2015, down from 18.8 percent in 2010, with some slowing in the growth of recurrent spending and a return of capital spending to the range of 6½–7 percent of GDP under more normal growth conditions.

While an economic recovery is under way, the fragility of the global recovery exposes Cambodia’s exports with their narrow base and heavy reliance on the U.S. and European markets to significant downside risks in the near term. Banking system weaknesses and a limited room for maneuver with regard to fiscal policy further undercut the economy’s ability to absorb additional shocks. Addressing longstanding structural weaknesses, improving the business environment and public sector service delivery may positively affect the balance of risks over the medium term. The development of extractive industries is not factored into the baseline, given uncertainties about the timing and revenue impact of new oil, gas, and mineral production.

8. **Contingent liabilities exist in several areas that require close scrutiny because of the potential burden on external and public debt.** Cambodia has signed several build-operate-transfer (BOT) projects—mainly related to new projects in the power sector. Contingent

liabilities arising from these types of contracts are not incorporated in this DSA because of a lack of information on the total amounts and terms of these agreements. The authorities indicated that they are working to collect necessary details and should be able to provide this information by next year. Other contingent liabilities could arise if the mitigation of risks in the banking sector necessitated government guarantees. Moreover, a shift of aid financing from grants to loans could also add to the debt burden. In light of Cambodia's need for major infrastructure investment and given its limited scope for servicing larger levels of debt, the authorities should monitor these types of commitments closely and transparently, including by developing and maintaining an inventory of all concessions granted and building and improving capacity to analyze the impact of contingent liabilities on debt sustainability.

III. EXTERNAL DEBT SUSTAINABILITY

9. **All external debt indicators remain below the policy-dependent debt burden thresholds under the baseline scenario, but thresholds are breached under the standard bound tests.**⁶ The main results of the external DSA are as follows (Figure 1):

- Under the baseline scenario, all external debt indicators remain below the threshold in 2010 and decline further over the medium and long term.
- In one bound test, two indicative thresholds are breached, in the case of the debt-to-revenues ratio for several years (Table 1b). Following a one-time 30 percent nominal depreciation of the Cambodian riel vis-à-vis the U.S. dollar relative to the baseline in 2011, the *NPV debt-to-revenue* ratio increases to about 235 percent in 2011 and then declines gradually below 200 percent by 2015. The *NPV debt-to-GDP* ratio also temporarily breaches the threshold and peaks at 31.4 percent in 2011 before falling under 30 percent in 2013.⁷
- The *debt service-to-exports* and *debt service-to-revenue ratios* stay well below the indicative threshold throughout the entire projection period due to concessionality of earlier debts.

10. **As an additional country-specific alternative scenario, this DSA considers the impact of increased bilateral borrowing.**

⁶ Historical averages are generally inadequate as a basis for generating stress tests and alternative scenarios for Cambodia because the post-conflict period between 1995 and 2005 was characterized by rapid catch-up growth from a very low base.

⁷ However, the relevance of this shock is questionable in Cambodia given the high degree of dollarization of the economy. For instance, the ratio of foreign currency deposits to broad money is about 80 percent and about half of tax revenues, although paid in local currency, are collected on imports. Assuming that 80 percent of GDP is effectively denominated in U.S. dollar in line with Cambodia's high degree of dollarization, the NPV of debt to GDP ratio would remain below the threshold under all standard stress tests.

- The authorities have inquired about the fiscal-sustainability implications of doubling their own legal ceiling of loan financing from SDR 200 million to SDR 400 million (about 2 percent of GDP) for the next few years to finance more capital projects. The terms of borrowings are assumed to be similar to those of bilateral loans from China (20-year maturity, 7-year grace period, 2 percent of interest), and the old ceiling would be reinstated in 2014.
- In the event, the debt level would rise and Cambodia's scope for absorbing additional risks would be significantly reduced (Figures 3 and 4, Tables 3a, 3b, 4a, 4b). In several bound tests, the indicative thresholds are breached for three years or more.
- With no information on the type of projects to be financed, it is difficult to project any positive impact of this additional borrowing on GDP growth and other parameters of Cambodia's overall capacity to absorb debt. Therefore, the calculations in the alternative scenario do not assume any "growth dividend". However, in order to return debt levels under this scenario by 2020 to those comparable to the baseline scenario, and thus achieve a similar capacity to absorb risks over the medium-to-long term, the growth dividend would need to be significant. On average, annual GDP growth would need to be 1.7 percentage points higher than in the baseline scenario (implying a 25 percent upward shift of potential output growth), while revenue growth would have to be increased even slightly more than that, suggesting additional efforts would be needed to boost the buoyancy of the tax system. Moreover, the still limited administrative capacity of the government in effectively managing capital spending and delays in the public management reform program would make achieving this growth dividend even more difficult.

11. **Staffs view that Cambodia faces a moderate risk of debt distress.** Although only two indicators appear sensitive to stress testing, risks are to the downside, given the uncertainty related to implicit contingent liabilities, including from a weak banking system, and possible delays in the operation of hydropower plants. Moreover, the debt dynamics could evolve rapidly, and should the government decide to increase external borrowings, its ability to withstand further shocks are significantly circumscribed. Under these circumstances, improved fiscal management, especially through revenue administration, would enable Cambodia to establish a sound footing for much needed development projects and provide greater room for external loan assistance.

IV. PUBLIC DEBT SUSTAINABILITY

12. **Given that most public debt is external, the dynamics of public debt behave similarly to those of external debt in the previous section.** The nominal stock of public debt, equivalent to 29 percent of GDP at the end of 2009, is expected to rise to 31 percent by end-2010 (Table 2a and Figure 2), reflecting the accommodative fiscal stance. Under the baseline, it would begin to decline as a share of GDP in 2011, as the DSA is based on current policies, which at present do not anticipate issuance of domestic debt.

- The *PV of public sector debt-to-GDP* ratio—23 percent for 2009—would rise to around 24 percent by 2010 before gradually declining to around 18 percent by 2020 (Table 2b).
- The *PV of public debt-to-revenue* ratio (inclusive of grants), which is estimated to be 144 percent in 2009, would rise to 153 in 2010 then decline to 97 percent by 2020.
- The *debt service-to-revenue* ratio remains low in most scenarios for the entire projection period under the baseline.

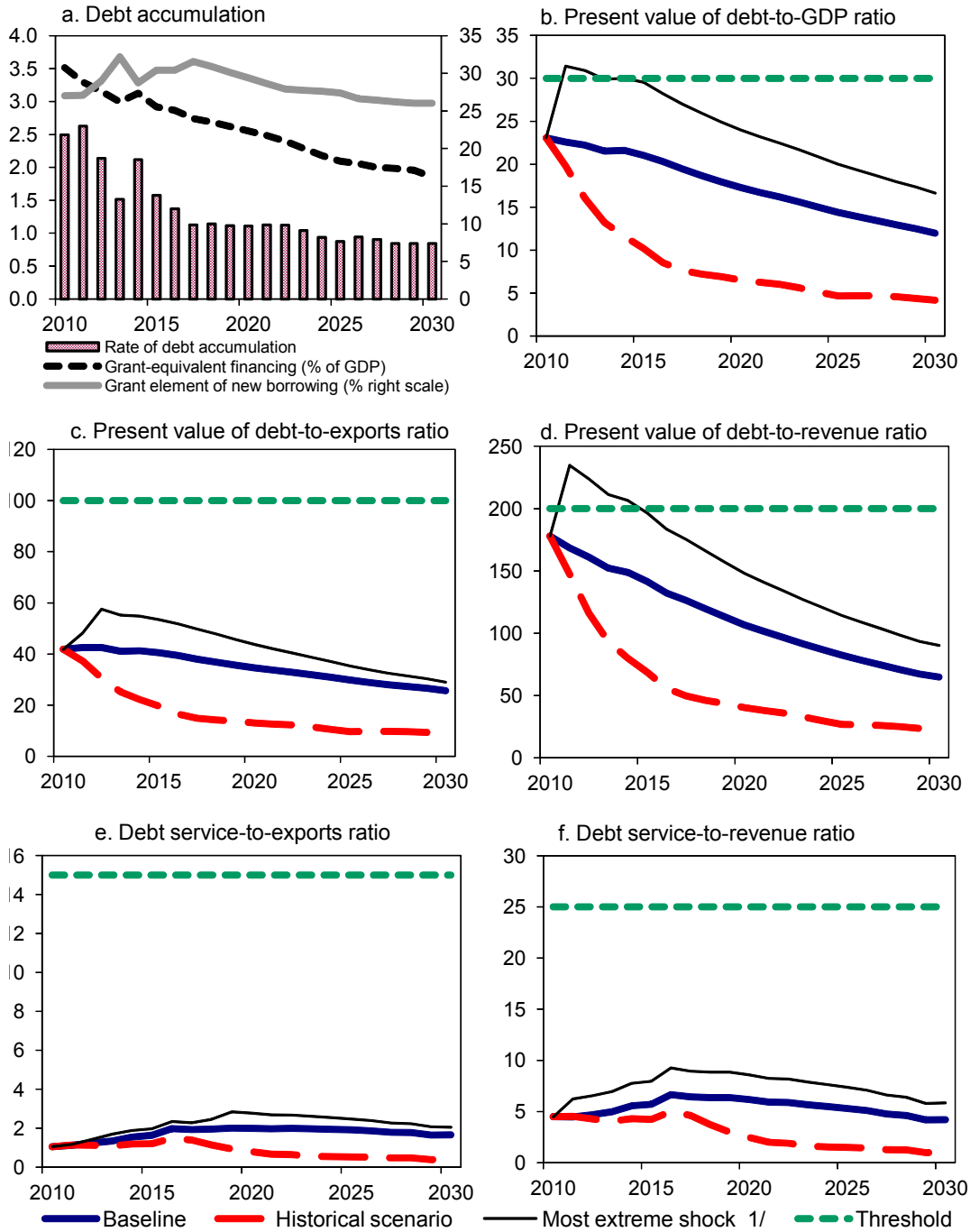
13. **Public debt ratios are sensitive to a continued accommodative fiscal stance and a permanent growth shock.** Under two of the alternative scenarios—an unchanged primary balance from 2010 or GDP growth permanently lower by one percentage point—the level of public debt (as a share of GDP) continues to rise over the projection period, reaching 44 percent and 39 percent, by 2030. Under these scenarios, the debt-to-revenue ratio would reach 222 percent and 191 percent, and the debt service-to-revenue ratio would reach 29 and 22 percent respectively by 2030. Bound tests also reveal a sensitivity of public debt ratios to a 10 percent increase in other debt creating flows (Table 2b). This is particularly relevant because of the potential risks posed by implicit contingent liabilities. Public debt ratios are also sensitive to a one-time 30 percent real depreciation, although, as noted above, this is a less relevant bound test for Cambodia.

V. CONCLUSION

14. **Staffs conclude that Cambodia faces a moderate risk of debt distress.** External debt burden indicators do not breach the thresholds under the baseline scenario. Only two thresholds are breached under the standard stress tests. However, this outlook could deteriorate in the event that actual liabilities arise from contingent obligations, mainly those related to hydropower plants, other major public infrastructure investments, and the banking sector. Any increased borrowing should be carefully contemplated, as it could significantly limit the government's ability to respond to any future crisis.

15. **Given the uncertainty about near- to medium-term prospects, staffs urge the Royal Government of Cambodia to continue pursuing a sound strategy for public debt management.** Careful consideration is needed in advance of possibly contracting less concessional loans and providing direct and indirect government guarantees, as they could impair sustainability, in particular if the revenue base remains low and institutions weak. Stronger capacity in debt management is an essential prerequisite for less concessional borrowing and other financing arrangements such as BOTs. Staffs also encourage the authorities to continue seeking agreements to resolve outstanding arrears.

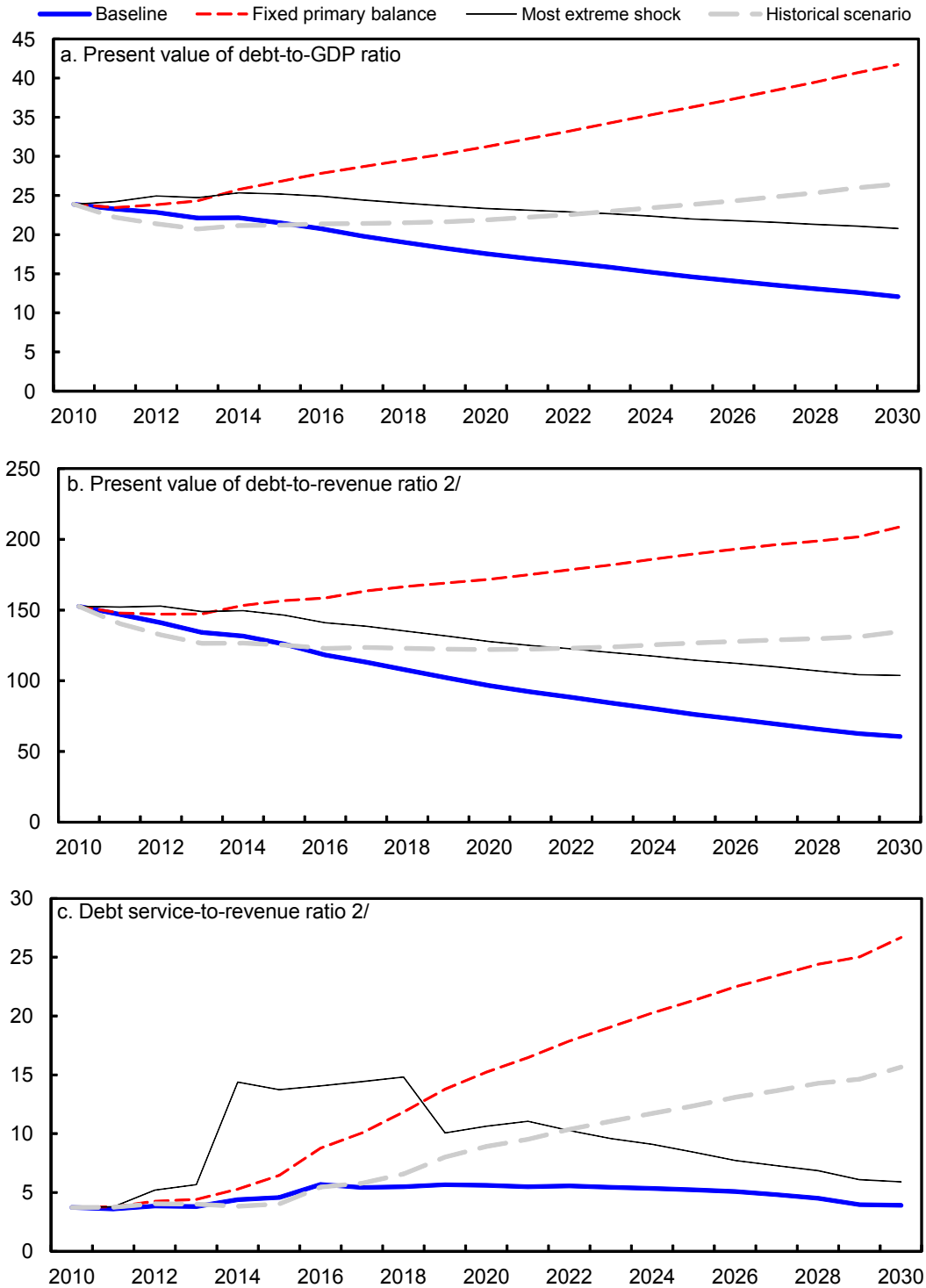
Figure 1. Cambodia: Indicators of External Debt Under Alternative Scenarios, 2010–30 1/



Sources: Cambodian authorities; and staff estimates and projections.

1/ The most extreme stress test is the bound test that yields the highest ratio in 2020. In figure b. it corresponds to a One-time depreciation shock; in c. to an Exports shock; in d. to a One-time depreciation shock; in e. to an Exports shock; and in figure f. to a One-time depreciation shock.

Figure 2. Cambodia: Indicators of Public Debt Under Alternative Scenarios, 2010–30 1/

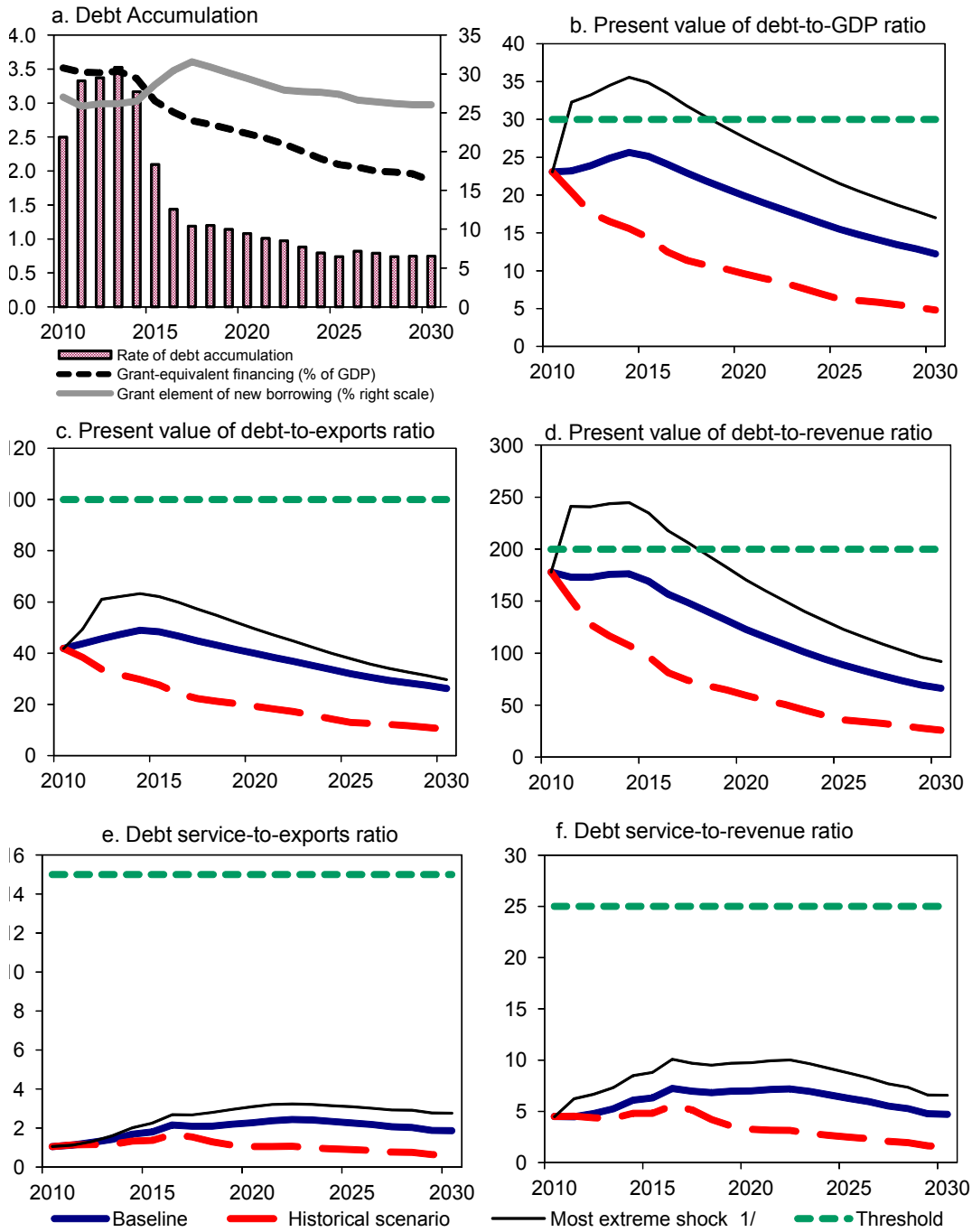


Sources: Cambodian authorities; and staff estimates and projections.

1/ The most extreme stress test is the bound test that yields the highest ratio in 2020. In figures a. and b., they correspond to Temporary shock to growth, and for c. it corresponds to a 10 percent of GDP increase non-debt creating flows in 2011.

2/ Revenues are defined inclusive of grants.

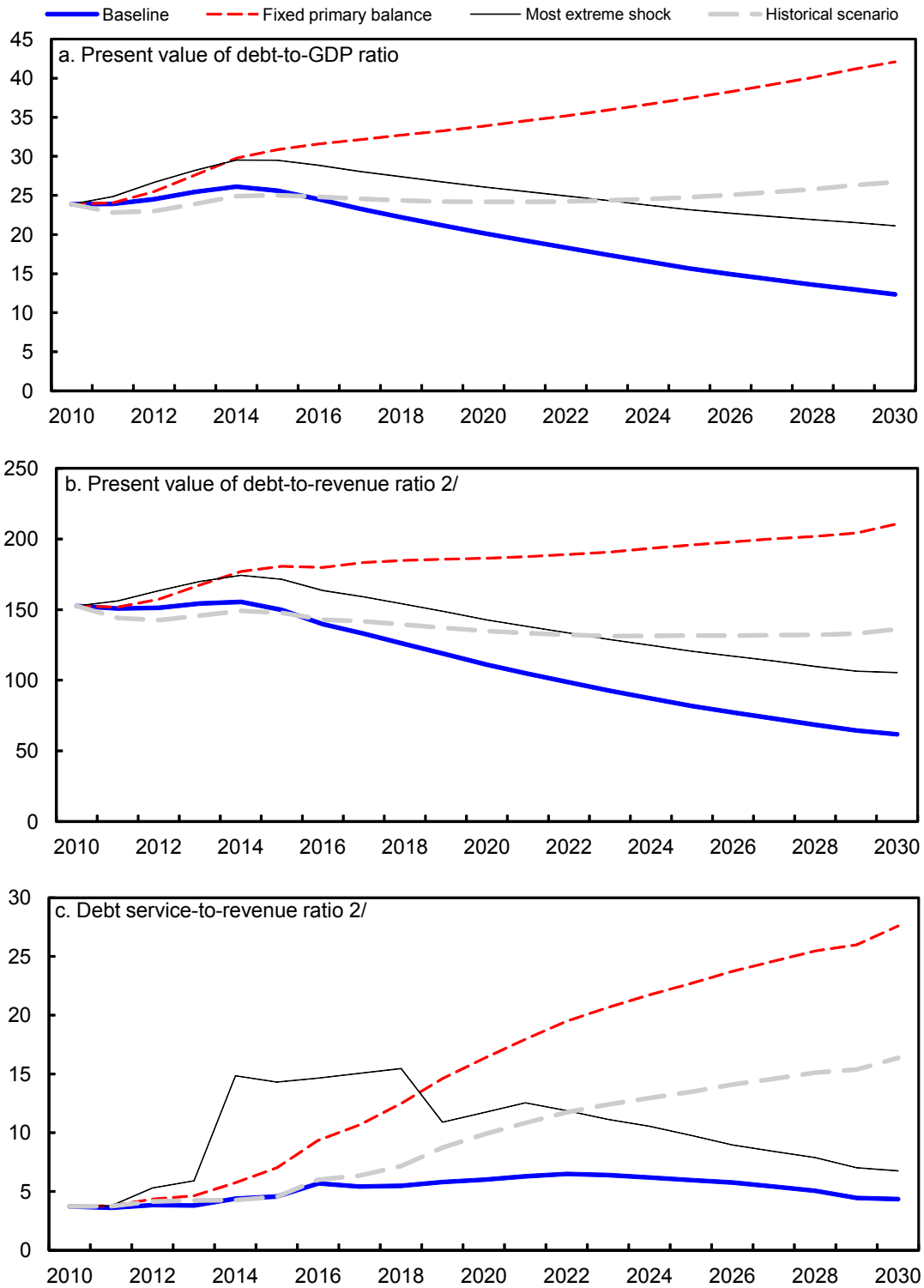
Figure 3. Alternative Scenario of Increasing Borrowing Limits during 2011–13: Indicators of External Debt, 2010–30 1/



Sources: Cambodian authorities; and staff estimates and projections.

1/ The most extreme stress test is the bound test that yields the highest ratio in 2020. In figure b. it corresponds to a One-time depreciation shock; in c. to an Exports shock; in d. to a One-time depreciation shock; in e. to an Exports shock; and in figure f. to a One-time depreciation shock.

Figure 4. Alternative Scenario of Increasing Borrowing Limits during 2011–13
Indicators of Public Debt, 2010–30 1/



Sources: Cambodian authorities; and staff estimates and projections.

1/ The most extreme stress test is the bound test that yields the highest ratio in 2020. In figures a. and b., they correspond to temporary shock to growth, and for c. it corresponds to a 10 percent of GDP increase nondebt creating flows in 2011.

2/ Revenues are defined inclusive of grants.

Table 1a. Cambodia: External Debt Sustainability Framework, Baseline Scenario, 2007–30 1/

(In percent of GDP, unless otherwise indicated)

	Actual			Historical Average 1/	Standard Deviation 1/	Projections									
	2007	2008	2009			2010	2011	2012	2013	2014	2015	2010–15 Average	2020	2030	2016–30 Average
External debt (nominal) 2/	29.4	24.9	28.1			29.9	30.7	30.7	28.2	27.8	27.3		22.3	15.5	
Of which: Public and publicly-guaranteed (PPG)	29.4	24.9	28.1			29.9	29.1	28.6	27.7	27.8	27.0		22.3	15.5	
Change in external debt	-1.3	-4.5	3.5			1.5	0.7	0.0	-2.5	-0.4	-0.5		-0.8	-0.7	
Identified net debt-creating flows	-12.6	-7.8	1.4			0.4	1.6	2.1	0.5	0.1	-0.6		-1.2	-1.1	
Noninterest current account deficit	2.2	6.0	4.9	2.7	1.8	7.0	8.9	9.3	7.8	7.2	6.5		5.3	4.2	
Deficit in balance of goods and services	8.9	10.6	10.0			12.6	12.0	11.2	9.9	9.5	9.0		8.3	7.1	
Exports	64.8	56.3	53.0			55.2	53.1	52.3	52.5	52.4	52.0		49.9	46.7	
Imports	73.7	66.9	63.0			67.8	65.0	63.5	62.4	61.9	61.0		58.3	53.7	
Net current transfers (negative = inflow)	-10.8	-8.6	-9.1	-10.2	1.2	-9.5	-6.6	-4.9	-4.9	-4.9	-4.8		-4.6	-4.1	
Of which: Official	-6.4	-6.0	-6.4			-6.7	-3.8	-2.0	-1.9	-1.8	-1.7		-1.4	-0.8	
Other current account flows (negative = net inflow)	4.1	4.0	4.0			4.0	3.5	3.1	2.8	2.6	2.3		1.6	1.3	
Net FDI (negative = inflow)	-10.0	-7.2	-4.7	-3.7	3.7	-5.6	-5.8	-5.8	-5.8	-5.8	-5.7		-5.4	-4.6	
Endogenous debt dynamics 3/	-4.8	-6.5	1.2			-1.0	-1.5	-1.5	-1.5	-1.4	-1.4		-1.1	-0.7	
Contribution from nominal interest rate	0.3	0.2	0.3			0.3	0.2	0.3	0.3	0.3	0.3		0.3	0.2	
Contribution from real GDP growth	-2.6	-1.5	0.5			-1.3	-1.8	-1.8	-1.8	-1.7	-1.7		-1.4	-1.0	
Contribution from price and exchange rate changes	-2.4	-5.2	0.4			...	...	...	...	...	...		...	...
Residual (3-4) 4/	11.3	3.2	2.1			1.1	-0.8	-2.1	-3.0	-0.5	0.1		0.4	0.4	
Of which: Exceptional financing	-0.2	0.0	-0.2			-0.2	-0.1	-0.1	-0.1	-0.1	-0.1		0.0	0.0	
Present value (PV) of external debt 5/	...	...	21.8			23.1	22.6	22.2	21.5	21.6	21.3		17.3	12.0
PV of external debt (in percent of exports) 5/	...	...	41.2			41.8	42.5	42.5	41.1	41.3	41.0		34.6	25.7
PV of PPG external debt	...	...	21.8			23.1	22.6	22.2	21.5	21.6	21.0		17.3	12.0
In percent of exports	...	...	41.2			41.8	42.5	42.5	41.1	41.3	40.5		34.6	25.7
In percent of government revenues	...	...	189.2			178.0	168.6	161.0	152.2	148.8	141.6		106.6	64.9
Debt service-to-exports ratio (in percent)	1.0	0.9	1.1			1.1	1.1	1.2	1.3	1.5	1.6		2.0	1.7	
PPG debt service-to-exports ratio (in percent)	1.0	0.9	1.1			1.1	1.1	1.2	1.3	1.5	1.6		2.0	1.7	
PPG debt service-to-revenue ratio (in percent)	5.3	4.3	5.2			4.5	4.5	4.7	5.0	5.6	5.7		6.2	4.2	
Total gross financing need (in billions of U.S. dollars)	-0.6	-0.1	0.1			0.2	0.5	0.6	0.4	0.4	0.3		0.3	0.4	
Noninterest current account deficit that stabilizes debt ratio	3.5	10.5	1.4			5.5	8.1	9.4	10.3	7.6	7.0		6.2	4.9	
Key macroeconomic assumptions															
Real GDP growth (in percent)	10.2	6.7	-2.0	8.1	4.1	4.8	6.8	6.5	6.5	6.6	6.8	6.3	6.8	6.7	
GDP deflator in U.S. dollar terms (change in percent)	8.6	21.6	-1.7	3.8	7.2	-0.2	6.6	4.4	3.6	2.7	3.3	3.4	3.3	3.4	
Effective interest rate (percent) 6/	1.1	0.8	1.1	1.1	0.1	0.9	0.9	1.1	1.2	1.3	1.4	1.2	1.4	1.6	
Growth of exports of G&S (U.S. dollar terms, in percent)	12.8	12.8	-9.3	15.5	10.9	8.7	9.6	9.6	10.7	9.3	9.4	9.5	9.3	9.7	
Growth of imports of G&S (U.S. dollar terms, in percent)	16.3	17.8	-9.2	14.2	9.4	12.4	9.3	8.5	8.5	8.6	8.6	9.3	10.0	9.5	
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	27.0	27.1	29.0	32.2	28.7	30.4	29.1	29.4	26.0
Government revenues (excluding grants, in percent of GDP)	11.9	12.0	11.5	...	...	13.0	13.4	13.8	14.2	14.5	14.9	...	16.2	18.5
Aid flows (in billions of U.S. dollars) 7/	0.4	0.6	0.4			0.4	0.5	0.5	0.5	0.6	0.6		0.9	1.3	
Of which: Grants	0.2	0.3	0.4			0.3	0.3	0.3	0.4	0.4	0.4		0.6	1.3	
Of which: Concessional loans	0.2	0.2	0.0			0.1	0.1	0.2	0.2	0.2	0.2		0.3	0.0	
Grant-equivalent financing (in percent of GDP) 8/	...	...	...			3.5	3.3	3.2	3.0	3.1	2.9		2.6	1.9
Grant-equivalent financing (in percent of external financing) 8/	...	...	...			60.9	59.7	62.8	68.5	60.3	65.2		64.6	65.1
Memorandum items:															
Nominal GDP (in billions of U.S. dollars)	8.7	11.3	10.9			11.4	12.9	14.4	15.9	17.4	19.2		31.2	83.1	
Nominal dollar GDP growth	19.6	29.8	-3.6			4.5	13.8	11.2	10.4	9.5	10.3	9.9	10.3	10.3	
PV of PPG external debt (in billions of U.S. dollars)	...	...	2.4			2.6	2.9	3.2	3.4	3.8	4.0		5.4	9.9
(PVt-PVt-1)/GDPt-1 (in percent)	...	...	...			2.5	2.6	2.1	1.5	2.1	1.6	2.1	1.1	0.8
Gross remittances (in billions of U.S. dollars)	0.4	0.3	0.3			0.3	0.4	0.4	0.5	0.5	0.6		1.0	2.7	
PV of PPG external debt (in percent of GDP + remittances)	...	...	21.3			22.4	22.0	21.6	20.9	21.0	20.4		16.7	11.6
PV of PPG external debt (in percent of exports + remittances)	...	...	39.2			39.8	40.4	40.3	38.8	39.0	38.2		32.5	24.0
Debt service of PPG external debt (in percent of exports + remittances)	...	...	1.1			1.0	1.1	1.2	1.3	1.5	1.5		1.9	1.6

Sources: Cambodian authorities; and staff estimates and projections.

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

2/ Includes both public and private sector external debt. The years in the table refer to calendar years.

3/ Derived as $[r - g - \rho(1+g)] / (1+g+\rho+g\rho)$ 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.

4/ 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.

5/ Assumes that PV of private sector debt is equivalent to its face value.

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

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 1b. Cambodia: Sensitivity Analysis for Key Indicators of External Debt, 2010–30
(In percent)

	Projections							
	2010	2011	2012	2013	2014	2015	2020	2030
Present value of debt-to-GDP ratio								
Baseline	23	23	22	22	22	21	17	12
A. Alternative scenarios								
A1. Key variables at their historical averages in 2010–30 1/	23	20	16	13	12	10	7	4
A2. New public sector loans on less favorable terms in 2010–30 2/	23	23	24	23	24	24	22	17
B. Bound tests								
B1. Real GDP growth at historical average minus one standard deviation in 2011–12	23	23	23	23	23	22	18	13
B2. Export value growth at historical average minus one standard deviation in 2011–12 3/	23	24	27	26	26	25	20	12
B3. U.S. dollar GDP deflator at historical average minus one standard deviation in 2011–12	23	25	26	26	26	25	21	14
B4. Net nondebt creating flows at historical average minus one standard deviation in 2011–12 4/	23	25	26	25	25	24	19	12
B5. Combination of B1–B4 using one-half standard deviation shocks	23	25	26	25	25	24	20	13
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	23	31	31	30	30	30	24	17
Present value of debt-to-exports ratio								
Baseline	42	43	42	41	41	40	35	26
A. Alternative scenarios								
A1. Key variables at their historical averages in 2010–30 1/	42	37	31	25	22	20	13	9
A2. New public sector loans on less favorable terms in 2010–30 2/	42	44	45	45	46	46	43	37
B. Bound tests								
B1. Real GDP growth at historical average minus one standard deviation in 2011–12	42	43	42	41	41	40	35	26
B2. Export value growth at historical average minus one standard deviation in 2011–12 3/	42	48	58	55	55	53	44	29
B3. U.S. dollar GDP deflator at historical average minus one standard deviation in 2011–12	42	43	42	41	41	40	35	26
B4. Net nondebt creating flows at historical average minus one standard deviation in 2011–12 4/	42	47	49	48	47	46	38	26
B5. Combination of B1–B4 using one-half standard deviation shocks	42	44	44	42	42	42	35	26
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	42	43	42	41	41	40	35	26
Present value of debt-to-revenue ratio								
Baseline	178	169	161	152	149	142	107	65
A. Alternative scenarios								
A1. Key variables at their historical averages in 2010–30 1/	178	148	116	93	80	69	40	23
A2. New public sector loans on less favorable terms in 2010–30 2/	178	174	171	165	166	161	134	95
B. Bound tests								
B1. Real GDP growth at historical average minus one standard deviation in 2011–12	178	173	169	159	156	148	112	68
B2. Export value growth at historical average minus one standard deviation in 2011–12 3/	178	182	199	186	180	170	123	67
B3. U.S. dollar GDP deflator at historical average minus one standard deviation in 2011–12	178	186	192	181	177	168	127	77
B4. Net nondebt creating flows at historical average minus one standard deviation in 2011–12 4/	178	188	187	176	171	162	118	66
B5. Combination of B1–B4 using one-half standard deviation shocks	178	189	188	177	173	164	122	73
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	178	235	224	211	206	196	148	90

Table 1b. Cambodia: Sensitivity Analysis for Key Indicators of External Debt, 2010–30 (concluded)
(In percent)

	Projections							
	2010	2011	2012	2013	2014	2015	2020	2030
Debt service-to-exports ratio								
Baseline	1	1	1	1	2	2	2	2
A. Alternative scenarios								
A1. Key variables at their historical averages in 2010–30 1/	1	1	1	1	1	1	1	0
A2. New public sector loans on less favorable terms in 2010–30 2/	1	1	1	1	2	2	3	2
B. Bound tests								
B1. Real GDP growth at historical average minus one standard deviation in 2011–12	1	1	1	1	2	2	2	2
B2. Export value growth at historical average minus one standard deviation in 2011–12 3/	1	1	1	2	2	2	3	2
B3. U.S. dollar GDP deflator at historical average minus one standard deviation in 2011–12	1	1	1	1	2	2	2	2
B4. Net nondebt creating flows at historical average minus one standard deviation in 2011–12 4/	1	1	1	1	2	2	2	2
B5. Combination of B1–B4 using one-half standard deviation shocks	1	1	1	1	2	2	2	2
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	1	1	1	1	2	2	2	2
Debt service-to-revenue ratio								
Baseline	4	4	5	5	6	6	6	4
A. Alternative scenarios								
A1. Key variables at their historical averages in 2010–30 1/	4	5	4	4	4	4	2	1
A2. New public sector loans on less favorable terms in 2010–30 2/	4	4	5	5	6	7	8	6
B. Bound tests								
B1. Real GDP growth at historical average minus one standard deviation in 2011–12	4	5	5	5	6	6	6	4
B2. Export value growth at historical average minus one standard deviation in 2011–12 3/	4	4	5	6	6	6	8	5
B3. U.S. dollar GDP deflator at historical average minus one standard deviation in 2011–12	4	5	6	6	7	7	7	5
B4. Net nondebt creating flows at historical average minus one standard deviation in 2011–12 4/	4	4	5	5	6	6	7	5
B5. Combination of B1–B4 using one-half standard deviation shocks	4	5	5	6	6	7	7	5
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	4	6	7	7	8	8	9	6
Memorandum item:								
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	24	24	24	24	24	24	24	24

Sources: Cambodian authorities; and staff estimates and projections.

1/ Variables include real GDP growth, growth of GDP deflator (in U.S. dollar terms), noninterest current account in percent of GDP, and nondebt creating flows.

2/ Assumes that the interest rate on new borrowing is by 2 percentage points higher than in the baseline, while grace and maturity periods are the same as in the baseline.

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

4/ Includes official and private transfers and FDI.

5/ Depreciation is defined as percentage decline in dollar/local currency rate, such that it never exceeds 100 percent.

6/ Applies to all stress scenarios except for A2 (less favorable financing) in which the terms on all new financing are as specified in footnote 2.

Table 2a. Cambodia: Public Sector Debt Sustainability Framework, Baseline Scenario, 2007–30

(In percent of GDP, unless otherwise indicated)

	Actual			Average 1/	Standard Deviation 1/	Projections									
	2007	2008	2009			2010	2011	2012	2013	2014	2015	2010–15 Average	2020	2030	2016–30 Average
Public sector debt 2/	30.5	25.6	29.0			30.8	29.8	29.2	28.3	28.3	27.5		22.6	15.6	
<i>Of which:</i> Foreign-currency denominated	29.6	24.9	28.4			29.9	29.1	28.6	27.7	27.8	27.0		22.3	15.5	
Change in public sector debt	-2.3	-5.0	3.5			1.7	-0.9	-0.6	-0.9	0.0	-0.8		-0.9	-0.7	
Identified debt-creating flows	-4.5	-6.8	5.1			1.6	-0.7	-0.7	-0.9	-0.9	-1.4		-1.7	-2.4	
Primary deficit	0.5	-0.4	3.8	1.8	1.7	2.9	2.8	2.0	1.5	1.2	0.8	1.9	0.2	-1.1	-0.2
Revenue and grants	14.1	15.1	15.6			15.6	15.9	16.2	16.5	16.8	17.1		18.2	20.0	
<i>Of which:</i> Grants	2.2	3.1	4.1			2.7	2.5	2.4	2.3	2.3	2.2		2.0	1.5	
Primary (noninterest) expenditure	14.5	14.6	19.4			18.6	18.6	18.2	18.0	18.0	17.9		18.4	18.8	
Automatic debt dynamics	-5.0	-6.4	1.3			-1.3	-3.5	-2.7	-2.4	-2.1	-2.3		-1.9	-1.3	
Contribution from interest rate/growth differential	-3.4	-2.4	0.8			-1.4	-2.1	-1.9	-1.9	-1.9	-1.9		-1.6	-1.1	
<i>Of which:</i> Contribution from average real interest rate	-0.4	-0.5	0.3			-0.1	-0.1	-0.1	-0.1	-0.1	-0.1		-0.1	-0.1	
<i>Of which:</i> Contribution from real GDP growth	-3.0	-1.9	0.5			-1.3	-2.0	-1.8	-1.8	-1.8	-1.8		-1.5	-1.0	
Contribution from real exchange rate depreciation	-1.5	-4.0	0.4			...	...	...	...	...	...		...	...
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	2.2	1.9	-1.6			0.1	-0.2	0.1	-0.1	1.0	0.6		0.8	1.7	
Other sustainability indicators	...	...	22.5			23.9	23.3	22.9	22.1	22.1	21.5		17.6	12.1
<i>Of which:</i> Foreign-currency denominated	...	...	21.8			23.1	22.6	22.2	21.5	21.6	21.0		17.3	12.0
<i>Of which:</i> External	...	...	21.8			23.1	22.6	22.2	21.5	21.6	21.0		17.3	12.0
<i>Of which:</i> External	...	...	...			...	...	...	...	...	...		...	...
Gross financing need 3/	2.7	0.9	4.9			4.1	4.0	3.2	2.7	2.4	2.1		1.5	-0.3	
PV of public sector debt-to-revenue and grants ratio (in percent)	...	...	144.0			152.7	146.9	141.1	134.1	131.6	125.8		96.6	60.5
PV of public sector debt-to-revenue ratio (in percent)	...	...	194.8			184.2	173.9	165.6	156.2	152.4	144.8		108.3	65.4
<i>Of which:</i> External 4/	...	...	189.2			178.0	168.6	161.0	152.2	148.8	141.6		106.6	64.9
Debt service-to-revenue and grants ratio (in percent) 5/	3.9	4.1	3.3			3.7	3.6	3.8	3.8	4.4	4.6		5.6	3.9	
Debt service-to-revenue ratio (in percent) 5/	4.6	5.1	4.5			4.5	4.3	4.5	4.4	5.1	5.3		6.3	4.2	
Primary deficit that stabilizes the debt-to-GDP ratio	2.8	4.5	0.3			1.2	3.7	2.6	2.5	1.1	1.7		1.0	-0.4	
Key macroeconomic and fiscal assumptions															
Real GDP growth (in percent)	10.2	6.7	-2.0	8.1	4.1	4.8	6.8	6.5	6.5	6.6	6.8	6.3	6.8	6.7	6.7
Average nominal interest rate on forex debt (in percent)	1.1	0.8	1.1	1.1	0.1	0.9	0.9	1.1	1.2	1.3	1.4	1.2	1.4	1.6	1.5
Average real interest rate on domestic debt (in percent)	-5.9	-17.6	0.1	-5.6	5.7	-0.6	-6.0	-4.1	-3.5	-2.7	-3.3	-3.4	-3.3
Real exchange rate depreciation (in percent, + indicates depreciation)	-5.5	-14.6	1.6	-1.7	6.0	0.3
Inflation rate (GDP deflator, in percent)	6.5	21.9	0.3	4.6	6.8	0.8	6.6	4.4	3.8	3.0	3.6	3.7	3.6	3.7	3.7
Growth of real primary spending (deflated by GDP deflator, in percent)	14.0	7.4	30.2	5.2	10.0	0.1	7.0	4.2	5.4	6.5	6.5	4.9	7.4	5.4	...
Grant element of new external borrowing (in percent)	27.0	27.1	29.0	32.2	28.7	30.4	29.1	29.4	26.0	...

Sources: Cambodian authorities; and staff estimates and projections.

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

2/ The public sector debt represents general government gross debt.

3/ 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.

4/ Revenues excluding grants.

5/ Debt service is defined as the sum of interest and amortization of medium- and long-term debt.

Table 2b. Cambodia: Sensitivity Analysis for Key Indicators of Public Debt, 2010–30
(In percent)

	Projections							
	2010	2011	2012	2013	2014	2015	2020	2030
Present value of debt-to-GDP ratio								
Baseline	24	23	23	22	22	22	18	12
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	24	22	21	21	21	21	22	26
A2. Primary balance is unchanged from 2010	24	23	24	24	26	27	31	42
A3. Permanently lower GDP growth 1/	24	24	24	23	24	24	25	35
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2011–12	24	24	25	25	25	25	23	21
B2. Primary balance is at historical average minus one standard deviations in 2011–12	24	24	25	24	24	23	19	13
B3. Combination of B1–B2 using one half standard deviation shocks	24	23	24	23	23	23	19	14
B4. One-time 30 percent real depreciation in 2011	24	32	31	29	28	27	21	14
B5. 10 percent of GDP increase in other debt-creating flows in 2011	24	32	31	30	29	28	22	14
Present value of debt-to-revenue ratio 2/								
Baseline	153	147	141	134	132	126	97	61
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	153	140	132	126	127	125	122	135
A2. Primary balance is unchanged from 2010	153	148	147	147	153	157	172	209
A3. Permanently lower GDP growth 1/	153	149	145	141	141	139	134	171
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2011–12	153	152	153	149	150	146	128	104
B2. Primary balance is at historical average minus one standard deviations in 2011–12	153	151	153	145	142	135	103	63
B3. Combination of B1–B2 using one half standard deviation shocks	153	147	145	139	137	132	104	70
B4. One-time 30 percent real depreciation in 2011	153	201	188	176	169	159	116	69
B5. 10 percent of GDP increase in other debt-creating flows in 2011	153	203	193	182	175	165	121	71
Debt service-to-revenue ratio 2/								
Baseline	4	4	4	4	4	5	6	4
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	4	4	4	4	4	4	9	16
A2. Primary balance is unchanged from 2010	4	4	4	4	5	6	15	27
A3. Permanently lower GDP growth 1/	4	4	4	4	5	6	9	18
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2011–12	4	4	4	5	6	6	10	11
B2. Primary balance is at historical average minus one standard deviations in 2011–12	4	4	4	5	6	7	7	4
B3. Combination of B1–B2 using one half standard deviation shocks	4	4	4	4	5	6	7	5
B4. One-time 30 percent real depreciation in 2011	4	5	6	6	7	8	10	9
B5. 10 percent of GDP increase in other debt-creating flows in 2011	4	4	5	6	14	14	11	6

Sources: Cambodian 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. Alternative Scenario of Increasing Borrowing Limits during 2011–13, External Debt Sustainability Framework 2007–30 1/

(In percent of GDP, unless otherwise indicated)

	Actual			Historical Average 1/	Standard Deviation 1/	Projections									
	2007	2008	2009			2010	2011	2012	2013	2014	2015	2010–15 Average	2020	2030	2016–30 Average
External debt (nominal) 2/	29.4	24.9	28.1			29.9	31.5	32.7	32.2	32.7	32.0		25.3	15.7	
Of which: Public and publicly-guaranteed (PPG)	29.4	24.9	28.1			29.9	29.9	30.7	31.9	32.7	32.0		25.3	15.7	
Change in external debt	-1.3	-4.5	3.5			1.5	1.5	1.3	-0.5	0.5	-0.7		-1.2	-0.8	
Identified net debt-creating flows	-12.6	-7.8	1.4			0.4	1.6	2.0	0.4	-0.2	-1.0		-1.6	-1.1	
Noninterest current account deficit	2.2	6.0	4.9	2.7	1.8	7.0	8.9	9.3	7.8	7.1	6.3		5.1	4.2	4.8
Deficit in balance of goods and services	8.9	10.6	10.0			12.6	12.0	11.2	9.9	9.5	9.0		8.3	7.1	
Exports	64.8	56.3	53.0			55.2	53.1	52.3	52.5	52.4	52.0		49.9	46.7	
Imports	73.7	66.9	63.0			67.8	65.0	63.5	62.4	61.9	61.0		58.3	53.7	
Net current transfers (negative = inflow)	-10.8	-8.6	-9.1	-10.2	1.2	-9.5	-6.6	-4.9	-4.9	-4.9	-4.8		-4.6	-4.1	-4.5
Of which: Official	-6.4	-6.0	-6.4			-6.7	-3.8	-2.0	-1.9	-1.8	-1.7		-1.4	-0.8	
Other current account flows (negative = net inflow)	4.1	4.0	4.0			4.0	3.5	3.1	2.7	2.4	2.1		1.5	1.3	
Net FDI (negative = inflow)	-10.0	-7.2	-4.7	-3.7	3.7	-5.6	-5.8	-5.8	-5.8	-5.8	-5.7		-5.4	-4.6	-5.0
Endogenous debt dynamics 3/	-4.8	-6.5	1.2			-1.0	-1.5	-1.5	-1.5	-1.5	-1.6		-1.3	-0.8	
Contribution from nominal interest rate	0.3	0.2	0.3			0.3	0.2	0.3	0.4	0.4	0.4		0.4	0.2	
Contribution from real GDP growth	-2.6	-1.5	0.5			-1.3	-1.8	-1.8	-1.9	-2.0	-2.0		-1.6	-1.0	
Contribution from price and exchange rate changes	-2.4	-5.2	0.4			...	...	...	...	...	...		...	...
Residual (3-4) 4/	11.3	3.2	2.1			1.1	0.0	-0.8	-0.9	0.8	0.3		0.3	0.3	
Of which: Exceptional financing	-0.2	0.0	-0.2			-0.2	-0.1	-0.1	-0.1	-0.1	-0.1		0.0	0.0	
Present value (PV) of external debt 5/	...	...	21.8			23.1	23.2	23.9	24.9	25.6	25.1		19.9	12.2	
PV of external debt (in percent of exports) 5/	...	...	41.2			41.8	43.7	45.7	47.4	48.9	48.4		39.9	26.2	
PV of PPG external debt	...	...	21.8			23.1	23.2	23.9	24.9	25.6	25.1		19.9	12.2	
In percent of exports	...	...	41.2			41.8	43.7	45.7	47.4	48.9	48.4		39.9	26.2	
In percent of government revenues	...	...	189.2			178.0	173.2	173.0	175.7	176.3	169.2		122.8	66.3	
Debt service-to-exports ratio (in percent)	1.0	0.9	1.1			1.1	1.1	1.3	1.4	1.7	1.8		2.3	1.9	
PPG debt service-to-exports ratio (in percent)	1.0	0.9	1.1			1.1	1.1	1.3	1.4	1.7	1.8		2.3	1.9	
PPG debt service-to-revenue ratio (in percent)	5.3	4.3	5.2			4.5	4.5	4.8	5.3	6.1	6.3		7.0	4.7	
Total gross financing need (in billions of U.S. dollars)	-0.6	-1.1	0.1			0.2	0.5	0.6	0.4	0.4	0.3		0.3	0.4	
Noninterest current account deficit that stabilizes debt ratio	3.5	10.5	1.4			5.5	7.4	8.1	8.2	6.6	7.0		6.4	5.0	
Key macroeconomic assumptions															
Real GDP growth (in percent)	10.2	6.7	-2.0	8.1	4.1	4.8	6.8	6.5	6.5	6.6	6.8	6.3	6.8	6.7	6.7
GDP deflator in U.S. dollar terms (change in percent)	8.6	21.6	-1.7	3.8	7.2	-0.2	6.6	4.4	3.6	2.7	3.3	3.4	3.3	3.4	3.3
Effective interest rate (percent) 6/	1.1	0.8	1.1	1.1	0.1	0.9	0.9	1.1	1.3	1.4	1.5	1.2	1.5	1.6	1.5
Growth of exports of G&S (U.S. dollar terms, in percent)	12.8	12.8	-9.3	15.5	10.9	8.7	9.6	9.6	10.7	9.3	9.4	9.5	9.3	9.7	9.5
Growth of imports of G&S (U.S. dollar terms, in percent)	16.3	17.8	-9.2	14.2	9.4	12.4	9.3	8.5	8.5	8.6	8.6	9.3	10.0	9.5	9.4
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	27.0	25.8	26.2	26.2	26.5	28.6	26.7	29.4	26.0	28.2
Government revenues (excluding grants, in percent of GDP)	11.9	12.0	11.5	...	...	13.0	13.4	13.8	14.2	14.5	14.9	...	16.2	18.5	17.0
Aid flows (in billions of U.S. dollars) 7/	0.4	0.6	0.4			0.4	0.5	0.5	0.5	0.6	0.6		0.9	1.3	
Of which: Grants	0.2	0.3	0.4			0.3	0.3	0.3	0.4	0.4	0.4		0.6	1.3	
Of which: Concessional loans	0.2	0.2	0.0			0.1	0.1	0.2	0.2	0.2	0.2		0.3	0.0	
Grant-equivalent financing (in percent of GDP) 8/	...	...	...			3.5	3.5	3.4	3.5	3.4	3.0		2.6	1.9	2.3
Grant-equivalent financing (in percent of external financing) 8/	...	...	...			60.9	54.9	53.7	52.2	53.1	60.5		64.6	65.1	64.0
Memorandum items:															
Nominal GDP (in billions of U.S. dollars)	8.7	11.3	10.9			11.4	12.9	14.4	15.9	17.4	19.2		31.2	83.1	
Nominal dollar GDP growth	19.6	29.8	-3.6			4.5	13.8	11.2	10.4	9.5	10.3	9.9	10.3	10.3	10.3
PV of PPG external debt (in billions of U.S. dollars)	...	...	2.4			2.6	3.0	3.4	3.9	4.4	4.8		6.2	10.2	
(PVT-PVT-1)/GDPT-1 (in percent)	...	...	...			2.5	3.3	3.4	3.5	3.2	2.1	3.0	1.1	0.7	1.0
Gross remittances (in billions of U.S. dollars)	0.4	0.3	0.3			0.3	0.4	0.4	0.5	0.5	0.6		1.0	2.7	
PV of PPG external debt (in percent of GDP + remittances)	...	...	21.3			22.4	22.6	23.2	24.1	24.9	24.4		19.3	11.8	
PV of PPG external debt (in percent of exports + remittances)	...	...	39.2			39.8	41.5	43.3	44.8	46.2	45.7		37.4	24.5	
Debt service of PPG external debt (in percent of exports + remittances)	...	...	1.1			1.0	1.1	1.2	1.3	1.6	1.7		2.1	1.7	

Sources: Cambodian authorities; and staff estimates and projections.

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

2/ Includes both public and private sector external debt. The years in the table refer to calendar years.

3/ Derived as $[r - g - \rho(1+g)] / (1+g+\rho+g\rho)$ 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.

4/ 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.

5/ Assumes that PV of private sector debt is equivalent to its face value.

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

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. Alternative Scenario of Increasing Borrowing Limits during 2011–13: Sensitivity Analysis for Key Indicators of External Debt
(2010–30, in percent)

	Projections							
	2010	2011	2012	2013	2014	2015	2020	2030
Present value of debt-to-GDP ratio								
Baseline	23	23	24	25	26	25	20	12
A. Alternative scenarios								
A1. Key variables at their historical averages in 2010–30 1/	23	20	18	16	16	14	10	5
A2. New public sector loans on less favorable terms in 2010–30 2/	23	24	26	28	29	29	25	18
B. Bound tests								
B1. Real GDP growth at historical average minus one standard deviation in 2011–12	23	24	25	26	27	26	21	13
B2. Export value growth at historical average minus one standard deviation in 2011–12 3/	23	25	29	30	30	29	23	13
B3. U.S. dollar GDP deflator at historical average minus one standard deviation in 2011–12	23	26	28	30	30	30	24	15
B4. Net nondebt creating flows at historical average minus one standard deviation in 2011–12 4/	23	26	28	28	29	28	22	12
B5. Combination of B1–B4 using one-half standard deviation shocks	23	26	28	29	30	29	23	14
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	23	32	33	35	36	35	28	17
Present value of debt-to-exports ratio								
Baseline	42	44	46	47	49	48	40	26
A. Alternative scenarios								
A1. Key variables at their historical averages in 2010–30 1/	42	38	34	31	30	28	19	10
A2. New public sector loans on less favorable terms in 2010–30 2/	42	45	49	53	56	56	50	39
B. Bound tests								
B1. Real GDP growth at historical average minus one standard deviation in 2011–12	42	44	46	47	49	48	40	26
B2. Export value growth at historical average minus one standard deviation in 2011–12 3/	42	49	61	62	63	62	50	30
B3. U.S. dollar GDP deflator at historical average minus one standard deviation in 2011–12	42	44	46	47	49	48	40	26
B4. Net nondebt creating flows at historical average minus one standard deviation in 2011–12 4/	42	49	53	54	55	54	43	27
B5. Combination of B1–B4 using one-half standard deviation shocks	42	46	47	49	50	49	40	26
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	42	44	46	47	49	48	40	26
Present value of debt-to-revenue ratio								
Baseline	178	173	173	176	176	169	123	66
A. Alternative scenarios								
A1. Key variables at their historical averages in 2010–30 1/	178	152	128	116	107	97	59	26
A2. New public sector loans on less favorable terms in 2010–30 2/	178	180	186	195	201	196	155	98
B. Bound tests								
B1. Real GDP growth at historical average minus one standard deviation in 2011–12	178	178	182	184	185	177	129	69
B2. Export value growth at historical average minus one standard deviation in 2011–12 3/	178	187	211	210	208	198	139	68
B3. U.S. dollar GDP deflator at historical average minus one standard deviation in 2011–12	178	191	206	209	210	201	146	79
B4. Net nondebt creating flows at historical average minus one standard deviation in 2011–12 4/	178	192	200	200	198	189	134	68
B5. Combination of B1–B4 using one-half standard deviation shocks	178	194	202	204	204	195	140	74
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	178	241	241	244	245	235	170	92

Table 3b. Alternative Scenario of Increasing Borrowing Limits during 2011–13: Sensitivity Analysis for Key Indicators of External Debt (concluded)
(2010–30, in percent)

	Projections							
	2010	2011	2012	2013	2014	2015	2020	2030
Debt service-to-exports ratio								
Baseline	1	1	1	1	2	2	2	2
A. Alternative scenarios								
A1. Key variables at their historical averages in 2010–30 1/	1	1	1	1	1	1	1	1
A2. New public sector loans on less favorable terms in 2010–30 2/	1	1	1	2	2	2	3	3
B. Bound tests								
B1. Real GDP growth at historical average minus one standard deviation in 2011–12	1	1	1	1	2	2	2	2
B2. Export value growth at historical average minus one standard deviation in 2011–12 3/	1	1	1	2	2	2	3	2
B3. U.S. dollar GDP deflator at historical average minus one standard deviation in 2011–12	1	1	1	1	2	2	2	2
B4. Net nondebt creating flows at historical average minus one standard deviation in 2011–12 4/	1	1	1	2	2	2	3	2
B5. Combination of B1–B4 using one-half standard deviation shocks	1	1	1	1	2	2	2	2
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	1	1	1	1	2	2	2	2
Debt service-to-revenue ratio								
Baseline	4	4	5	5	6	6	7	5
A. Alternative scenarios								
A1. Key variables at their historical averages in 2010–30 1/	4	5	4	4	5	5	3	2
A2. New public sector loans on less favorable terms in 2010–30 2/	4	4	5	6	7	8	10	7
B. Bound tests								
B1. Real GDP growth at historical average minus one standard deviation in 2011–12	4	5	5	6	6	7	7	5
B2. Export value growth at historical average minus one standard deviation in 2011–12 3/	4	4	5	6	7	7	9	5
B3. U.S. dollar GDP deflator at historical average minus one standard deviation in 2011–12	4	5	6	6	7	8	8	6
B4. Net nondebt creating flows at historical average minus one standard deviation in 2011–12 4/	4	4	5	6	7	7	8	5
B5. Combination of B1–B4 using one-half standard deviation shocks	4	5	6	6	7	7	8	5
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	4	6	7	7	8	9	10	7
Memorandum item:								
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	24	24	24	24	24	24	24	24

Sources: Cambodian authorities; and staff estimates and projections.

1/ Variables include real GDP growth, growth of GDP deflator (in U.S. dollar terms), noninterest current account in percent of GDP, and nondebt creating flows.

2/ Assumes that the interest rate on new borrowing is by 2 percentage points higher than in the baseline, while grace and maturity periods are the same as in the baseline.

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

4/ Includes official and private transfers and FDI.

5/ Depreciation is defined as percentage decline in dollar/local currency rate, such that it never exceeds 100 percent.

6/ Applies to all stress scenarios except for A2 (less favorable financing) in which the terms on all new financing are as specified in footnote 2.

Table 4a. Alternative Scenario of Increasing Borrowing Limits during 2011–13: Public Sector Debt Sustainability Framework, 2007–30

(In percent of GDP, unless otherwise indicated)

	Actual			Average 1/	Standard Deviation 1/	Projections									
	2007	2008	2009			2010	2011	2012	2013	2014	2015	2010–15 Average	2020	2030	2016–30 Average
Public sector debt 2/	30.5	25.6	29.0			30.8	30.6	31.3	32.4	33.3	32.5		25.6	15.8	
<i>Of which:</i> Foreign-currency denominated	29.6	24.9	28.4			29.9	29.9	30.7	31.9	32.7	32.0		25.3	15.7	
Change in public sector debt	-2.3	-5.0	3.5			1.7	-0.1	0.7	1.1	0.8	-0.8		-1.3	-0.8	
Identified debt-creating flows	-4.5	-6.8	5.1			1.6	-0.7	-0.8	-1.0	-1.2	-1.8		-2.0	-2.5	
Primary deficit	0.5	-0.4	3.8	1.8	1.7	2.9	2.8	2.0	1.5	1.2	0.8	1.9	0.2	-1.1	-0.2
Revenue and grants	14.1	15.1	15.6			15.6	15.9	16.2	16.5	16.8	17.1		18.2	20.0	
<i>Of which:</i> Grants	2.2	3.1	4.1			2.7	2.5	2.4	2.3	2.3	2.2		2.0	1.5	
Primary (noninterest) expenditure	14.5	14.6	19.4			18.6	18.6	18.2	18.0	18.0	17.9		18.4	18.8	
Automatic debt dynamics	-5.0	-6.4	1.3			-1.3	-3.5	-2.8	-2.5	-2.4	-2.7		-2.1	-1.3	
Contribution from interest rate/growth differential	-3.4	-2.4	0.8			-1.4	-2.1	-2.0	-2.0	-2.1	-2.2		-1.8	-1.1	
<i>Of which:</i> Contribution from average real interest rate	-0.4	-0.5	0.3			-0.1	-0.1	-0.1	-0.1	-0.1	-0.1		-0.1	-0.1	
<i>Of which:</i> Contribution from real GDP growth	-3.0	-1.9	0.5			-1.3	-2.0	-1.9	-1.9	-2.0	-2.1		-1.7	-1.0	
Contribution from real exchange rate depreciation	-1.5	-4.0	0.4			...	...	...	...	...	...		...	...
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	2.2	1.9	-1.6			0.1	0.6	1.5	2.1	2.0	1.0		0.7	1.6	
Other sustainability indicators	...	...	22.5			23.9	23.9	24.5	25.5	26.1	25.6		20.2	12.3
<i>Of which:</i> Foreign-currency denominated	...	...	21.8			23.1	23.2	23.9	24.9	25.6	25.1		19.9	12.2
<i>Of which:</i> External	...	...	21.8			23.1	23.2	23.9	24.9	25.6	25.1		19.9	12.2
<i>Of which:</i> External	...	...	...			...	...	...	...	...	...		...	...
Gross financing need 3/	2.7	0.9	4.9			4.1	4.0	3.2	2.7	2.4	2.1		1.5	-0.2	
PV of public sector debt-to-revenue and grants ratio (in percent)	...	...	144.0			152.7	150.7	151.3	154.3	155.4	149.8		111.0	61.8
PV of public sector debt-to-revenue ratio (in percent)	...	...	194.8			184.2	178.5	177.6	179.7	179.9	172.3		124.5	66.8
<i>Of which:</i> External 4/	...	...	189.2			178.0	173.2	173.0	175.7	176.3	169.2		122.8	66.3
Debt service-to-revenue and grants ratio (in percent) 5/	3.9	4.1	3.3			3.7	3.6	3.8	3.8	4.4	4.6		6.0	4.4	
Debt service-to-revenue ratio (in percent) 5/	4.6	5.1	4.5			4.5	4.3	4.5	4.4	5.1	5.3		6.7	4.7	
Primary deficit that stabilizes the debt-to-GDP ratio	2.8	4.5	0.3			1.2	2.9	1.3	0.4	0.4	1.6		1.4	-0.3	
Key macroeconomic and fiscal assumptions															
Real GDP growth (in percent)	10.2	6.7	-2.0	8.1	4.1	4.8	6.8	6.5	6.5	6.6	6.8	6.3	6.8	6.7	6.7
Average nominal interest rate on forex debt (in percent)	1.1	0.8	1.1	1.1	0.1	0.9	0.9	1.1	1.3	1.4	1.5	1.2	1.5	1.6	1.5
Average real interest rate on domestic debt (in percent)	-5.9	-17.6	0.1	-5.6	5.7	-0.6	-6.0	-4.1	-3.5	-2.7	-3.3	-3.4	-3.3
Real exchange rate depreciation (in percent, + indicates depreciation)	-5.5	-14.6	1.6	-1.7	6.0	0.3
Inflation rate (GDP deflator, in percent)	6.5	21.9	0.3	4.6	6.8	0.8	6.6	4.4	3.8	3.0	3.6	3.7	3.6	3.7	3.7
Growth of real primary spending (deflated by GDP deflator, in percent)	14.0	7.4	30.2	5.2	10.0	0.1	7.0	4.2	5.4	6.5	6.5	4.9	7.4	5.4	...
Grant element of new external borrowing (in percent)	27.0	25.8	26.2	26.2	26.5	28.6	26.7	29.4	26.0	...

Sources: Cambodian authorities; and staff estimates and projections.

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

2/ The public sector debt represents general government debt.

3/ 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.

4/ Revenues excluding grants.

5/ Debt service is defined as the sum of interest and amortization of medium- and long-term debt.

Table 4b. Alternative Scenario of Increasing Borrowing Limits during 2011–13: Key Indicators of Public Debt
(In percent)

	Projections							
	2010	2011	2012	2013	2014	2015	2020	2030
Present value of debt-to-GDP ratio								
Baseline	24	24	25	25	26	26	20	12
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	24	23	23	24	25	25	24	27
A2. Primary balance is unchanged from 2010	24	24	25	28	30	31	34	42
A3. Permanently lower GDP growth 1/	24	24	25	27	28	28	28	35
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2011–12	24	25	27	28	30	29	26	21
B2. Primary balance is at historical average minus one standard deviations in 2011–12	24	25	27	27	28	27	21	13
B3. Combination of B1–B2 using one half standard deviation shocks	24	24	25	26	27	27	22	14
B4. One-time 30 percent real depreciation in 2011	24	32	32	32	32	31	24	14
B5. 10 percent of GDP increase in other debt-creating flows in 2011	24	33	33	33	33	32	25	14
Present value of debt-to-revenue ratio 2/								
Baseline	153	151	151	154	155	150	111	62
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	153	144	142	146	149	148	135	136
A2. Primary balance is unchanged from 2010	153	152	157	167	177	181	186	211
A3. Permanently lower GDP growth 1/	153	152	155	161	166	164	150	173
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2011–12	153	156	163	170	174	171	143	105
B2. Primary balance is at historical average minus one standard deviations in 2011–12	153	155	164	166	166	159	117	64
B3. Combination of B1–B2 using one half standard deviation shocks	153	151	156	159	161	156	119	71
B4. One-time 30 percent real depreciation in 2011	153	205	198	194	190	181	130	71
B5. 10 percent of GDP increase in other debt-creating flows in 2011	153	207	203	202	199	189	136	72
Debt service-to-revenue ratio 2/								
Baseline	4	4	4	4	4	5	6	4
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	4	4	4	4	4	5	10	16
A2. Primary balance is unchanged from 2010	4	4	4	5	6	7	16	28
A3. Permanently lower GDP growth 1/	4	4	4	5	6	6	11	20
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2011–12	4	4	5	5	6	7	11	11
B2. Primary balance is at historical average minus one standard deviations in 2011–12	4	4	4	5	6	8	8	5
B3. Combination of B1–B2 using one half standard deviation shocks	4	4	4	5	5	6	8	6
B4. One-time 30 percent real depreciation in 2011	4	5	6	7	8	8	12	10
B5. 10 percent of GDP increase in other debt-creating flows in 2011	4	4	5	6	15	14	12	7

Sources: Cambodian 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.