INTERNATIONAL MONETARY FUND

KYRGYZ REPUBLIC

Joint World Bank/IMF Debt Sustainability Analysis

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

Approved by David Owen and Adnan Mazarei (IMF) and
Carlos A. Primo Braga and Luca Barbone (World Bank)

December 1, 2008

Based on the joint World Bank-IMF Low-Income Country Debt Sustainability Framework, the Kyrgyz Republic is assessed to be at a moderate risk of external debt distress. [5] *Compared to the previous joint DSA, the debt outlook looks more favorable. However, some stress tests suggest that the country is still vulnerable, particularly to exogenous shocks or a reversal in real GDP growth. Further improvement of the debt outlook will depend on maintaining sound macroeconomic policies; including prudent borrowing, as well as assuring continued concessional financing to support the country's large development needs.*

I. Background

The Kyrgyz Republic's nominal stock of public and publicly guaranteed (PPG) external debt declined from about 100 percent in 2003 to 70 percent of GDP in 2006, and further to 55 percent in 2007. The decline has been mainly the result of an acceleration in the pace of economic growth and a nominal appreciation of the domestic currency, but also reflects firm fiscal discipline and Paris Club support. The present value (PV) of PPG external debt was equivalent to $1,372 million (36.6 percent of GDP) at end-2007, of which 72 percent is owed to international financial institutions (IFIs) and the remaining 28 percent to bilateral creditors. The external private debt reached almost 6 percent of GDP at end-2007.

The Kyrgyz Republic has had two debt restructuring agreements with the Paris Club. The first debt restructuring with the Paris Club, in December 2002, provided for flow rescheduling, in three phases and on Houston terms, of maturities falling due between December 2001 and April 2005, all of which have been implemented. The second, in March 2005, under the Evian approach, stipulated that the full amount of principal payments on official development assistance (ODA) credits was to be repaid over 40 years, with a

---

[5] The DSA has been produced jointly by Bank and Fund staffs, in consultation with Asian Development Bank staff and the Kyrgyz authorities. The fiscal year for the Kyrgyz Republic is January 1–December 31.

13-year grace period, at interest rates at least as favorable as the original concessional rates applied to those loans. On non-ODA credit, creditors agreed to halve the NPV, following either debt reduction or debt service reduction options. The Kyrgyz authorities indicated in early 2007 that they did not wish to avail themselves of the HIPC initiative but subsequently expressed interest for the MDRI. At end-2007, indebtedness indicators were estimated to be below the applicable HIPC Initiative thresholds, while income levels were estimated to be above the IMF MDRI thresholds.

II. Underlying Debt Sustainability Analysis Assumptions

The macroeconomic assumptions reflect the framework underlying the prospective IMF program and World Bank and IMF staff projections through 2028. They have been updated to incorporate recent developments and changes to the medium-term outlook, but long-term assumptions are broadly similar to the framework used in the last LIC DSA. The data on the stock of external debt at end-2007 were provided by the Kyrgyz authorities.

The framework assumes continuation of sound macroeconomic policies—including fiscal consolidation and prudent public debt management—as a basis for sustaining growth (Box 1). The baseline projections do not rely on substantially higher growth rates than the historical average nor on significant improvement in loan terms. Growth would be underpinned by firm implementation of structural reforms to remove impediments to private investment and stimulate economic diversification. The framework features average long-run GDP growth of about 5 percent per year over 2014–28, broadly in line with growth assumed in the last DSA, backed by strong private investments (including foreign direct investment) spurred by improvements in the business climate. The external current account deficit is projected to decline from 8.5 percent of GDP in 2009 to 3.4 percent in 2013, but to average 4.4 percent in 2014–28 following the gradual decline of gold output.

The last DSA underestimated the near-term GDP growth. In particular, actual 2007 GDP in U.S. dollar terms was 7½ percent higher than the level projected in the last DSA. In addition, exports and the current account deficit in 2007 were also substantially lower than the levels projected earlier.

Box 1. Baseline Macroeconomic Assumptions

Real GDP growth is projected to average about 5 percent over the longer term, only marginally higher than the historical average of about 4½ percent, on the back of strong private investment, including FDI, spurred by improvements in the business climate. Affected by the global and regional slowdown combined with weaker domestic demand due to high inflation and slowdown in credit expansion, GDP growth is expected to slow down in the near term. In the medium term, however, growth will rebound supported by a continued recovery in the mining industry and the resumed reforms in the energy sector, while tourism-related services and a reformed energy sector would underpin measured but sustained long-run growth. Consistent with the assumption of sound fiscal and monetary policies, inflation (measured by the GDP deflator) would average 4½ percent annually over 2011–28.

Recovering from an accident in the Kumtor gold mine in 2006, gold output is expected to grow substantially in 2008–09. Long-run projections assume that a sharp drop in gold output from the expected closure of the existing Kumtor mine in 2014–15 will be compensated by gains in tourism receipts and other exports, as well as an increase in production in new gold mines. In all, annual growth of exports of goods and services, including estimates for informal agricultural exports and reexports of consumer goods, would average 6.3 percent over the long term, maintaining the export-to-GDP ratio at about 53 percent. Consistent with growth projections and expected FDI inflows, imports of goods and services would grow at about 6.6 percent per year over the long term, with the import-to-GDP ratio declining only slightly to 85 percent. Remittances are projected to slow down somewhat in the near term, but will remain strong over medium and long term, with their ratio to GDP slowly declining.

Net FDI inflows would stay at about 3½ percent of GDP over the medium and long term. While in the near-term FDI would be concentrated in traditional sectors, like mining and industry, business climate improvements should yield a more diversified structure of FDI in the outer years. International reserves would be kept above three months of imports of goods and services.

Medium-term public borrowing is assumed to be on highly concessional terms, primarily from IFIs. Over the DSA horizon, concessionality of new external public borrowing would gradually decline from around 41.8 percent in 2008–13 to 15.8 percent in 2014–28, as more borrowing will be contracted at less concessional terms from bilateral and commercial creditors.

A new Tax Code that aims at harmonizing the tax rates with those of the neighboring countries will become effective in 2009. VAT rates will go down from 20 percent to 12 percent, and the existing sales, road, and emergency taxes will be eliminated. A new turnover tax with a broader base and a property tax will be introduced that aim at offsetting losses from the tax cuts. Tighter control of goods and services spending, as well as improved tax administration will prevent the primary deficit from rising significantly. As the primary deficit is projected to be stable at about one percent of GDP in 2009–28, the public sector debt declines to about 45 percent of GDP by 2028, from about 60 percent in 2007, reflecting a prudent public debt management strategy of the government. After the closure of the currently operating Kumtor mine by 2014–15, the primary deficit will increase to about 1½ percent of GDP in 2014–15, but will return to one percent on average thereafter.

III. External Debt Sustainability Analysis

A. Baseline

The baseline scenario points to a cautiously favorable improvement in the external debt outlook over time. Already by end-2007, the PV of debt-to-exports and the PV of debt-to-revenue ratios, at 70.6 and 128.4 percent respectively, were well below their policy-based indicative thresholds.[6] Only the PV of PPG debt-to-GDP ratio, at 37 percent, is close to its relevant threshold of 40 percent in 2007, but by end-2008 it is projected to fall to 29.3 percent. Over the DSA horizon, all debt ratios move steadily on a downward path underpinned by steady growth, fiscal consolidation, and prudent debt management. With the anticipated closure of the existing Kumtor gold mine operations in 2014–15, the ratios would increase somewhat around that time, but would eventually fall back below the pre-closure levels. The DSA exercise does not incorporate potential debt financing of the Kambar–Ata hydroelectric project as it reflects the authorities' current plan to develop the project on the basis of equity participation.

Debt service is expected to remain manageable throughout the DSA horizon. This reflects the high concessionality of both the outstanding multilateral debt and the assumed new borrowing, as well as the debt relief delivered by Paris Club creditors in 2005. The PPG debt service ratio would increase slightly from 2 percent of exports (4.7 percent of revenues) in 2013 to 3.9 percent of exports (7.9 percent of revenues) in 2028, driven by less-concessional new borrowing and the repayment of the previously restructured bilateral debt.

B. Alternative Scenarios and Stress Tests

Stress tests and alternative scenarios show that the Kyrgyz Republic's external debt is vulnerable to large shocks or substantially less favorable assumptions. The PV of debt-to-GDP ratio and the PV of debt-to-revenue rise above the relevant indicative thresholds under some tests. The PV of debt-to-GDP ratio rises above the indicative threshold of 40 percent in the medium term when the net non-debt creating inflows over 2009−2010 are one standard deviation below their historical average, or under a shock over 2009−2010 combining lower GDP and export growth, currency depreciation, and lower net nondebt creating inflows. The PV of debt-to-revenue would also rise above the relevant indicative threshold of 250 percent in the short term under these conditions. However, the PV of debt-to-exports ratio is robust and does not breach its threshold under various tests. Debt service ratios also prove resilient, staying below their indicative threshold levels under various tests.

[6] The Kyrgyz Republic is rated as a *medium performer* based on the World Bank's Country Performance and Institutional Assessment Index for low income countries. The relevant policy-dependent thresholds for countries in this category are 40 percent for the PV of the debt-to-GDP ratio, 150 percent for the PV of debt-to-exports ratio, 250 percent for the PV of debt-to-revenue ratio, 20 percent of the debt service-to-exports ratio, and 30 percent of the debt service-to-revenue ratio.

The historical scenario—where key macro variables evolve according to their historic averages—points to a more benign external debt outlook than the baseline scenario.

IV. Public Debt Sustainability Analysis

A. Baseline

Domestic debt is projected to increase and will play a more important role in financing the budget deficit in the medium and long term. Domestic debt currently accounts for less than 10 percent of total public debt. However, by 2028, domestic debt is projected to exceed one-third of total public debt as domestic financial markets deepen.

The Kyrgyz Republic public debt outlook is projected to be manageable in the medium and long term. Under the baseline scenario, the PV of public debt to GDP ratio goes down to 26½ percent in 2013 from about 40 percent in 2007, but increases to 41½ percent of GDP by 2028. The tax revenue ratio will increase from 23 percent in 2007 to 27½ percent in 2028. The tax revenue ratio will drop somewhat in 2009 due to tax cuts envisaged in the new tax code. Also, in 2014 and 2015, the income tax ratio will drop as the existing Kumtor mine closes. However, in the longer run, income taxes will gradually recover and, aided by discipline on the expenditure side, contribute to the sustainability of public debt indicators.

B. Alternative Scenarios and Stress Tests

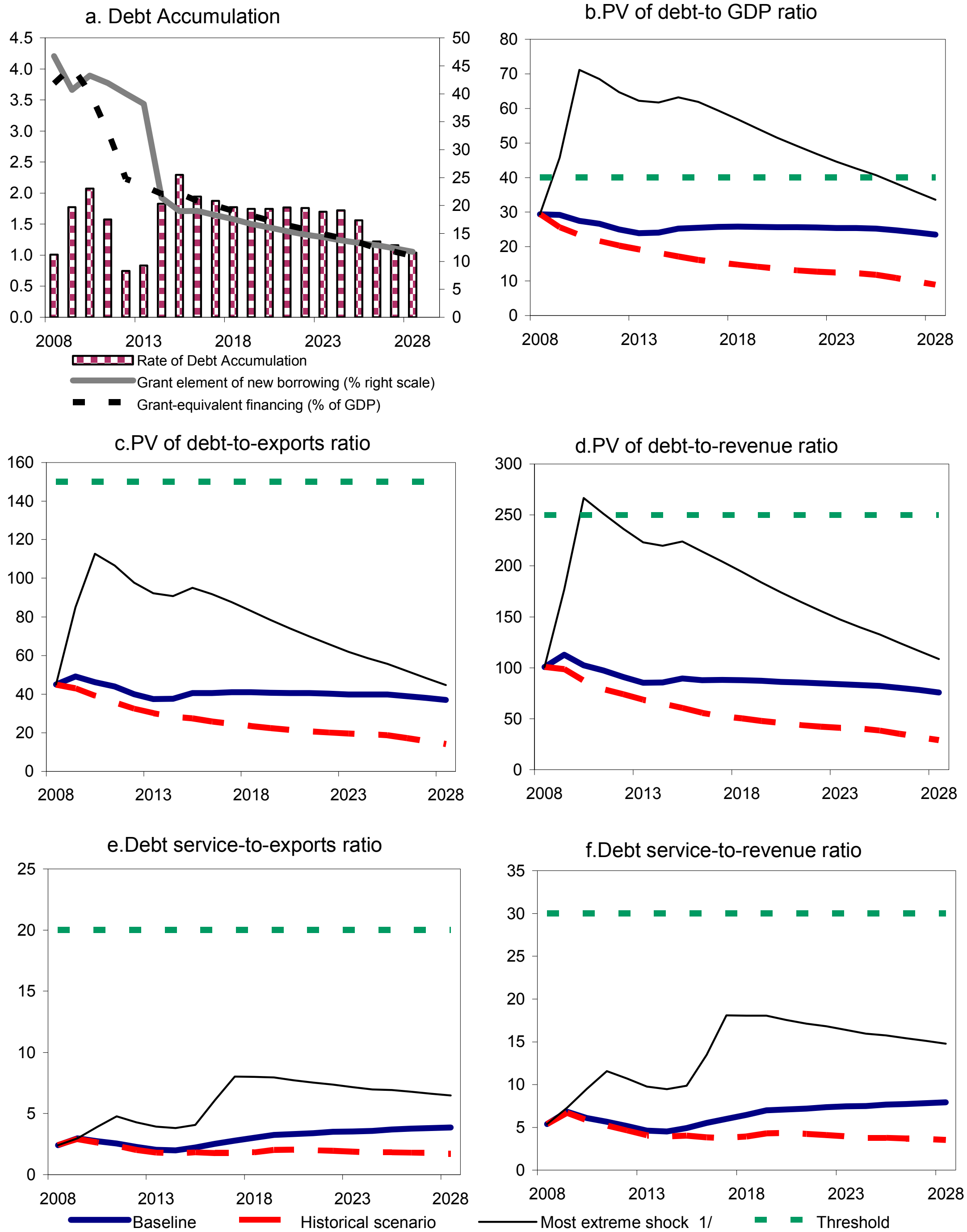
Alternative scenarios and stress tests show that Kyrgyz Republic's public debt remains sensitive to shocks that reduce real GDP growth. The standard sensitivity analysis based on the historical variation of key parameters, including real GDP growth and exchange rate, shows that debt ratios will rise considerably in the long run. Under different stress tests and scenarios, the PV debt-to-GDP ratio in 2028 will vary from about 35 percent under the fixed (at 2008 level) primary deficit scenario to 98 percent under the permanent real GDP growth shock scenario.

V. Debt Distress Classification and Conclusions

Based on the projected external debt burden indicators, Kyrgyz Republic is assessed to be at moderate risk of debt distress. The public DSA suggests that Kyrgyz Republic's total public sector debt seems manageable in light of the dynamics of the domestic debt stock. All NPV-based external debt indicators in the baseline are projected to stay below their indicative thresholds over the DSA horizon. Moreover, under the baseline scenario, the debt service burden would remain well below the thresholds, reflecting the high concessionality of the external debt. Nevertheless, alternative scenarios and stress tests show that the external public debt indicators could approach or breach the thresholds if the Kyrgyz Republic were to experience large adverse exogenous shocks or relax its prudent debt management policy. This conclusion is consistent with the last DSA.

Low-concessionality loans from bilateral and commercial creditors to finance large public investment projects continue to pose a risk to the debt outlook. Staff recognizes that the Kyrgyz Republic has large developmental needs, but considers paramount to lock in the recent progress towards achieving and maintaining debt sustainability. Even if loans have a grant element of at least 35 percent, it would be important to ensure that the underlying projects are viable and that market risks, including exchange rate risk, are accounted for, so as to avoid the build up of an unsustainable debt burden.

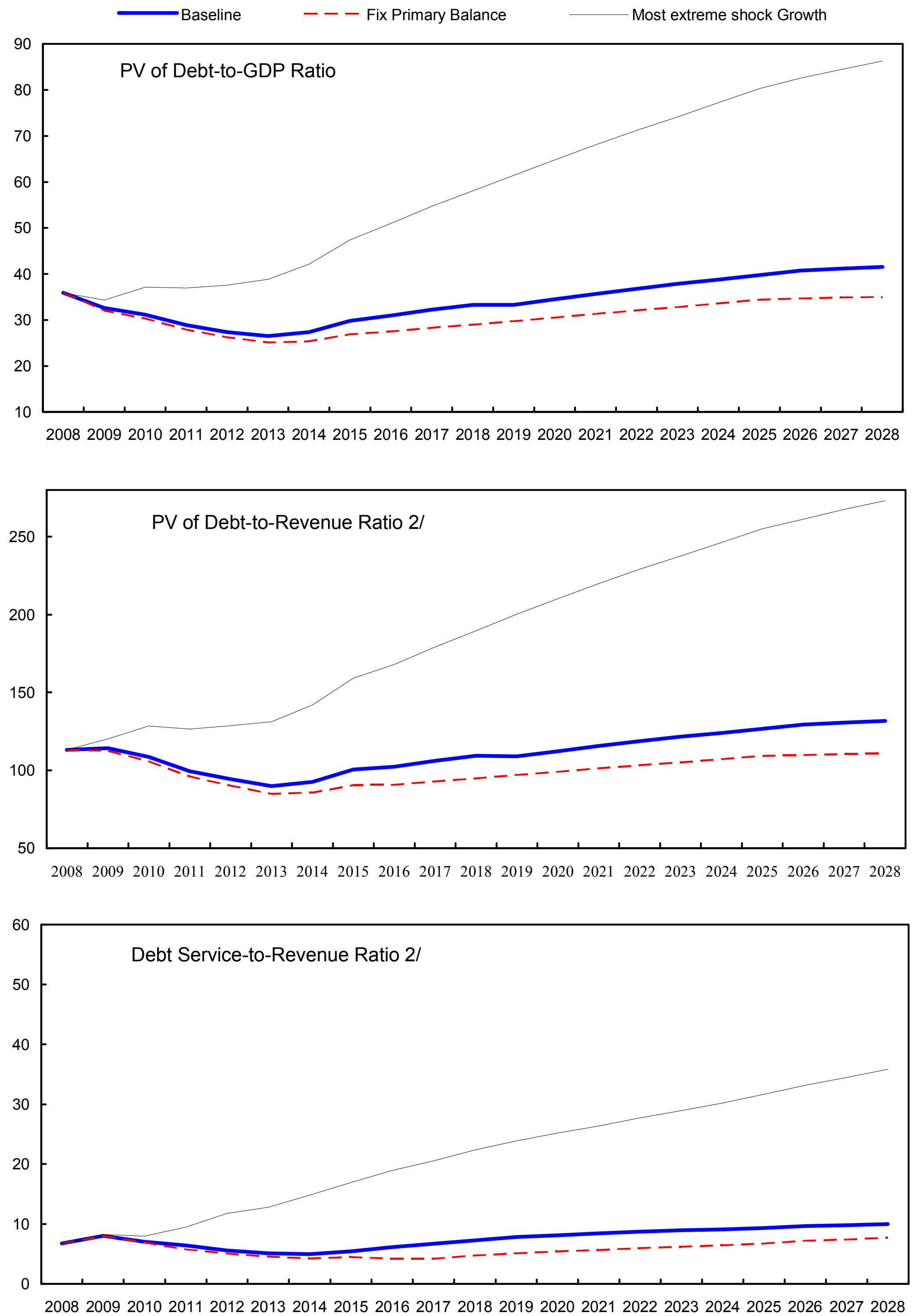
Figure 1. Indicators of Public and Publicly Guaranteed External Debt under Alternatives Scenarios, 2008–28 1/



Source: Staff projections and simulations.

1/ The most extreme stress test is the test that yields the highest ratio in 2018. 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 Combination shock and in picture f. to a Combination shock

Figure 2. Indicators of Public Debt Under Alternative Scenarios, 2008–28 1/



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

1/ The most extreme stress test is the test that yields the highest ratio in 2018.

2/ Revenues are defined inclusive of grants.

Table 1a. Public Sector Debt Sustainability Framework, Baseline Scenario, 2005–28
(In percent of GDP, unless otherwise indicated)

	Actual			Average	Standard Deviation	Estimate	Projections								
	2005	2006	2007			2008	2009	2010	2011	2012	2013	2008–13 Average	2018	2028	2014–28 Average
Public sector debt 1/	85.9	72.5	57.7			52.2	47.2	45.1	42.1	39.4	37.5		41.1	45.2	
o/w foreign-currency denominated	80.4	67.9	53.7			49.0	44.6	42.5	40.9	37.9	35.7		34.1	27.5	
Change in public sector debt	-7.0	-13.4	-14.8			-5.5	-5.0	-2.1	-2.9	-2.7	-1.9		0.5	-0.2	
Identified debt-creating flows	-2.0	-12.8	-16.8			-4.9	-5.0	-3.6	-2.5	-2.5	-1.6		-0.9	-1.2	
Primary deficit 2/	1.7	1.5	0.0	4.3	3.5	0.5	0.9	0.7	0.6	0.7	0.8	0.7	1.0	0.5	0.9
Revenue and grants	24.7	26.4	30.8			31.7	28.5	28.7	29.0	29.0	29.5		30.5	31.5	
of which: grants	1.0	0.8	2.3			2.7	2.6	2.0	1.7	1.6	1.6		1.2	0.7	
Primary (noninterest) expenditure	26.4	27.9	30.8			32.3	29.4	29.4	29.6	29.8	30.2		31.5	32.1	
Automatic debt dynamics	-3.5	-14.3	-16.7			-5.6	-5.8	-4.3	-3.0	-3.1	-2.3		-1.8	-1.6	
Contribution from interest rate/growth differential	-1.2	-4.3	-6.7			-4.6	-1.8	-2.6	-2.2	-2.9	-2.3		-1.7	-1.6	
of which: contribution from average real interest rate	-1.3	-1.7	-1.2			-0.5	0.1	0.1	-0.1	-0.1	-0.1		0.2	0.6	
of which: contribution from real GDP growth	0.1	-2.6	-5.5			-4.0	-1.9	-2.7	-2.1	-2.8	-2.2		-1.9	-2.2	
Contribution from real exchange rate depreciation	-2.3	-10.0	-9.9			-1.1	-4.0	-1.7	-0.8	-0.2	0.0		...	...	
Other identified debt-creating flows	-0.2	0.0	-0.1			0.1	-0.1	-0.1	-0.1	-0.1	-0.1		-0.1	0.0	
Privatization receipts (negative)	-0.2	0.0	-0.1			0.1	-0.1	-0.1	-0.1	-0.1	-0.1		-0.1	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)	-0.1	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	-5.0	-0.7	2.0			-0.5	0.0	1.5	-0.5	-0.2	-0.3		1.3	1.0	
Other Sustainability Indicators															
PV of public sector debt	54.3	48.3	39.8			35.9	32.5	31.1	28.8	27.4	26.5		33.4	41.5	
o/w foreign-currency denominated	48.8	43.6	35.9			32.7	30.0	28.5	27.6	25.9	24.8		26.4	23.8	
o/w external	46.9	42.0	34.6			31.7	29.1	27.8	26.9	25.3	24.2		26.0	23.7	
PV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...	
Gross financing need 3/	9.1	6.1	5.9			3.4	3.6	4.2	3.6	3.4	2.8		4.6	8.9	
PV of public sector debt-to-revenue and grants ratio (in percent)	219.9	182.7	129.3			113.0	114.1	108.5	99.3	94.5	90.0		109.3	131.6	
PV of public sector debt-to-revenue ratio (in percent)	229.4	188.3	139.8			123.3	125.7	116.5	105.7	100.1	95.0		113.8	134.5	
o/w external 4/	198.0	163.9	121.5			108.9	112.6	104.0	98.7	92.4	86.8		88.9	76.7	
Debt service-to-revenue and grants ratio (in percent) 5/	12.7	10.0	6.5			6.8	8.0	7.0	6.4	5.6	5.1		7.3	10.0	
Debt service-to-revenue ratio (in percent) 5/	13.3	10.3	7.0			7.4	8.8	7.6	6.9	5.9	5.4		7.6	10.2	
Primary deficit that stabilizes the debt-to-GDP ratio	8.7	15.0	14.8			6.0	5.9	2.9	3.5	3.5	2.7		0.5	0.7	
Key macroeconomic and fiscal assumptions															
Real GDP growth (in percent)	-0.2	3.1	8.2	4.4	4.1	7.5	3.7	6.2	5.0	7.1	5.8	5.9	4.8	5.2	4.9
Average nominal interest rate on forex debt (in percent)	1.6	0.9	0.9	1.8	0.7	0.8	1.1	1.3	1.3	1.3	1.3	1.2	2.0	2.9	2.2
Average real interest rate on domestic debt (in percent)	-2.2	-1.3	-10.2	6.8	18.1	2.5	18.5	11.4	11.0	12.1	10.5	11.0	5.3	4.3	5.2
Real exchange rate depreciation (in percent, + indicates depreciation)	-6.3	-15.0	-22.0	-9.4	7.8	-4.0	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	11.2	11.9	22.1	4.4	14.3	19.3	2.8	7.3	3.9	2.4	2.0	6.3	1.7	2.0	1.8
Growth of real primary spending (deflated by GDP deflator, in percent)	0.0	0.1	0.2	0.0	0.1	0.1	-0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1
Grant element of new external borrowing (in percent)	...	...	...	…	…	46.7	40.6	43.3	41.9	39.4	38.2	41.7	17.6	11.7	...

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

1/ General government gross debt.
2/ Includes the statistical discrepancy.
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 2a. Sensitivity Analysis for Key Indicators of Public Debt 2008–28

	Projections							
	2008	2009	2010	2011	2012	2013	2018	2028
PV of Debt-to-GDP Ratio								
Baseline	35.9	32.6	31.2	28.9	27.4	26.5	33.3	41.5
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	35.9	35.4	37.7	38.8	41.2	43.7	64.1	100.6
A2. Primary balance is unchanged from 2008	35.9	32.0	30.3	27.9	26.2	25.1	29.0	35.0
A3. Permanently lower GDP growth 1/	35.9	32.8	32.0	30.5	30.0	30.4	48.5	97.7
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviation in 2009-2010	35.9	34.3	37.1	36.9	37.5	38.9	58.1	86.3
B2. Primary balance is at historical average minus one standard deviation in 2009-2010	35.9	39.0	43.9	41.2	39.1	37.8	43.5	47.9
B3. Combination of B1-B2 using one half standard deviation shocks	35.9	37.7	42.4	41.0	40.3	40.3	53.2	69.8
B4. One-time 30 percent real depreciation in 2009	35.9	44.6	41.6	38.4	36.4	35.2	41.8	50.6
B5. 10 percent of GDP increase in other debt-creating flows in 2009	35.9	41.9	40.0	37.2	35.4	34.2	40.2	45.3
PV of Debt-to-Revenue Ratio 2/								
Baseline	113.0	114.3	108.7	99.5	94.3	89.9	109.2	131.6
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	113.0	124.3	131.4	133.5	141.6	147.8	209.4	318.2
A2. Primary balance is unchanged from 2008	113.0	112.4	105.6	96.0	90.1	85.0	94.8	110.6
A3. Permanently lower GDP growth 1/	113.0	115.1	111.4	104.8	103.3	103.1	158.3	308.7
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviation in 2009-2010	113.0	120.1	128.6	126.4	128.7	131.2	189.6	273.0
B2. Primary balance is at historical average minus one standard deviation in 2009-2010	113.0	136.7	153.3	141.8	134.6	128.2	142.5	151.9
B3. Combination of B1-B2 using one half standard deviation shocks	113.0	132.4	147.6	141.0	138.5	136.4	173.8	220.6
B4. One-time 30 percent real depreciation in 2009	113.0	156.5	145.0	132.2	125.4	119.4	137.0	160.4
B5. 10 percent of GDP increase in other debt-creating flows in 2009	113.0	147.1	139.5	128.3	122.0	115.9	131.6	143.6
Debt Service-to-Revenue Ratio 2/								
Baseline	6.8	8.0	7.0	6.5	5.6	5.1	7.3	10.0
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	6.8	8.0	8.2	14.0	14.7	18.2	25.8	43.9
A2. Primary balance is unchanged from 2008	6.8	8.0	6.9	5.8	5.1	4.6	4.8	7.7
A3. Permanently lower GDP growth 1/	6.8	8.1	7.2	7.2	6.9	7.3	16.2	41.8
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviation in 2009-2010	6.8	8.3	8.0	9.5	11.8	12.8	22.4	35.8
B2. Primary balance is at historical average minus one standard deviation in 2009-2010	6.8	8.0	9.1	21.2	21.0	14.6	12.5	15.6
B3. Combination of B1-B2 using one half standard deviation shocks	6.8	8.1	9.0	18.1	17.8	15.6	18.6	27.3
B4. One-time 30 percent real depreciation in 2009	6.8	9.3	9.6	9.6	9.3	9.0	13.4	20.8
B5. 10 percent of GDP increase in other debt-creating flows in 2009	6.8	8.0	10.1	24.9	8.9	15.6	9.9	14.0

Sources: Kyrgyz authorities; and Fund staff estimates and projections.
1/ Assumes that real GDP growth is at baseline minus one standard deviation divided by the length of the projection period.
2/ Revenues are defined inclusive of grants.

Table 3a. External Debt Sustainability Framework, Baseline Scenario, 2005–28 1/
(In percent of GDP, unless otherwise indicated)

	Actual			Historical Average	Standard Deviation	Projections									
	2005	2006	2007			2008	2009	2010	2011	2012	2013	2008–13 Average	2018	2028	2014–28 Average
External debt (nominal) 1/	85.5	77.7	61.1			49.3	48.6	45.0	42.6	39.0	36.4		35.5	29.5	
o/w public and publicly guaranteed (PPG)	78.0	69.8	55.5			44.4	43.8	41.1	39.6	36.7	34.7		33.4	27.1	
Change in external debt	-9.6	-7.8	-16.6			-11.9	-0.7	-3.6	-2.4	-3.6	-2.6		-0.5	-0.9	
Identified net debt-creating flows	-14.0	-14.7	-24.3			-2.8	1.4	-1.1	-1.3	-3.3	-2.7		-0.9	-0.5	
Non-interest current account deficit	-4.3	2.4	-0.5	-0.1	4.6	6.0	7.9	5.6	4.4	3.2	2.8		3.4	3.6	3.4
Deficit in balance of goods and services	14.0	27.1	26.0			30.0	30.0	26.9	26.5	24.1	23.4		24.7	21.4	
Exports	42.8	52.3	59.9			65.3	59.3	59.5	60.5	62.4	63.6		62.9	63.3	
Imports	56.8	79.4	85.9			95.3	89.2	86.5	87.0	86.5	87.0		87.6	84.7	
Net current transfers (negative = inflow)	-20.3	-25.7	-27.2	-12.3	9.0	-26.5	-24.1	-23.6	-23.7	-23.7	-23.3		-22.5	-19.0	-21.4
o/w official	-0.9	-0.4	-0.8			-1.0	-0.7	-0.6	-0.5	-0.5	-0.5		-0.4	-0.2	
Other current account flows (negative = net inflow)	2.1	1.0	0.7			2.5	2.0	2.3	1.6	2.7	2.7		1.2	1.2	
Net FDI (negative = inflow)	-1.7	-6.4	-5.6	-3.0	2.6	-5.7	-5.4	-4.7	-4.4	-4.4	-4.1		-3.6	-3.6	-3.6
Endogenous debt dynamics 2/	-8.0	-10.7	-18.2			-3.1	-1.1	-2.0	-1.4	-2.1	-1.4		-0.7	-0.4	
Contribution from nominal interest rate	1.5	0.7	0.7			0.5	0.7	0.6	0.7	0.7	0.7		0.9	1.1	
Contribution from real GDP growth	0.1	-2.3	-4.8			-3.6	-1.7	-2.6	-2.1	-2.8	-2.1		-1.6	-1.5	
Contribution from price and exchange rate changes	-9.6	-9.1	-14.1			…	…	…	…	…	…		…	…	
Residual (3-4) 3/	4.4	6.9	7.7			-9.1	-2.1	-2.5	-1.0	-0.3	0.1		0.5	-0.5	
o/w exceptional financing	-1.8	-0.2	-0.1			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
PV of external debt 4/	...	...	42.3			34.2	33.9	31.2	29.5	27.2	25.6		27.8	25.9	
In percent of exports	...	...	70.6			52.3	57.2	52.5	48.8	43.6	40.2		44.3	40.9	
PV of PPG external debt	...	...	36.6			29.3	29.1	27.4	26.6	24.9	23.9		25.8	23.4	
In percent of exports	...	...	61.1			44.9	49.2	46.0	43.9	40.0	37.5		41.0	37.0	
In percent of government revenues	...	...	128.4			100.8	112.6	102.5	97.3	91.1	85.5		88.0	76.0	
Debt service-to-exports ratio (in percent)	7.7	5.4	4.3			3.0	3.9	4.8	5.1	4.7	4.5		4.9	6.1	
PPG debt service-to-exports ratio (in percent)	6.5	4.4	2.9			2.4	3.0	2.7	2.5	2.3	2.0	2.5	3.0	3.9	3.2
PPG debt service-to-revenue ratio (in percent)	11.8	8.9	6.1			5.4	6.8	6.1	5.6	5.1	4.6	5.6	6.5	7.9	6.8
Total gross financing need (Billions of U.S. dollars)	-0.1	0.0	-0.1			0.1	0.2	0.2	0.2	0.1	0.1		0.3	0.8	
Non-interest current account deficit that stabilizes debt ratio	5.4	10.2	16.1			17.8	8.6	9.2	6.8	6.8	5.4		3.8	4.5	
Key macroeconomic assumptions															
Real GDP growth (in percent)	-0.2	3.1	8.2	4.4	4.1	7.5	3.7	6.2	5.0	7.1	5.8	5.9	4.8	5.2	4.9
GDP deflator in US dollar terms (change in percent)	11.2	11.9	22.1	4.4	14.3	19.3	2.8	7.3	3.9	2.4	2.0	6.3	1.7	2.0	1.8
Effective interest rate (percent) 5/	1.7	0.9	1.2	2.3	1.4	1.0	1.4	1.5	1.6	1.7	1.8	1.5	2.6	3.7	3.0
Growth of exports of G&S (US dollar terms, in percent)	2.9	40.9	51.1	14.5	21.5	39.9	-3.2	14.5	10.9	13.1	10.2	14.2	6.9	7.3	6.8
Growth of imports of G&S (US dollar terms, in percent)	23.9	61.3	42.8	17.3	25.6	42.3	-0.2	10.4	9.9	9.1	8.6	13.4	6.4	6.7	6.6
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	46.7	40.6	43.3	41.9	39.4	38.2	41.7	17.6	11.7	15.8
Government revenues (excluding grants, in percent of GDP)	23.7	25.6	28.5			29.1	25.9	26.7	27.3	27.4	27.9		29.3	30.9	29.7
Aid flows (in Billions of US dollars) 6/	0.1	0.1	0.2			0.2	0.4	0.6	0.8	0.9	1.0		1.9	4.8	
o/w Grants	0.0	0.0	0.1			0.1	0.1	0.1	0.1	0.1	0.1		0.1	0.1	
o/w Concessional loans	0.1	0.1	0.1			0.1	0.3	0.5	0.7	0.8	0.9		1.8	4.7	
Grant-equivalent financing (in percent of GDP) 7/	...	...	...			3.8	4.0	3.6	3.0	2.3	2.1		1.7	1.0	1.5
Grant-equivalent financing (in percent of external financing) 7/	...	...	...			74.7	66.6	62.4	63.3	70.3	69.8		42.0	30.1	37.8
Memorandum items:															
Nominal GDP (Billions of US dollars)	2.5	2.8	3.7			4.8	5.1	5.8	6.4	7.0	7.6		10.2	20.2	
Nominal dollar GDP growth	11.1	15.4	32.1			28.2	6.6	13.9	9.1	9.8	8.0	12.6	6.6	7.3	6.8
PV of PPG external debt (in Billions of US dollars)	...	...	1.4			1.4	1.5	1.6	1.7	1.7	1.8		2.6	4.7	
(PVt-PVt-1)/GDPt-1 (in percent)	...	...	...			1.0	1.7	2.1	1.6	0.8	0.8	1.3	1.8	1.0	1.7

Source: Staff simulations.

1/ Includes both public and private sector external debt.
2/ Derived as [r - g - r(1+g)]/(1+g+r+gr) times previous period debt ratio, with r = nominal interest rate; g = real GDP growth rate, and r = 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/ Defined as grants, concessional loans, and debt relief.
7/ 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. Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2008–28
(In percent)

	Projections											
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2028
PV of debt-to GDP ratio												
Baseline	29.3	29.2	27.4	26.6	24.9	23.8	24.0	25.2	25.4	25.7	25.8	23.4
A. Alternative Scenarios												
A1. Key variables at their historical averages in 2008-2028 1/	29.3	25.5	23.3	21.6	20.2	19.2	18.2	17.1	16.1	15.4	14.8	9.0
A2. New public sector loans on less favorable terms in 2008-2028 2	29.3	28.9	27.1	26.3	24.6	23.6	23.5	25.4	26.3	27.2	27.8	30.3
B. Bound Tests												
B1. Real GDP growth at historical average minus one standard deviation in 2009-2010	29.3	30.2	30.1	29.1	27.3	26.1	26.3	27.7	27.9	28.2	28.2	25.7
B2. Export value growth at historical average minus one standard deviation in 2009-2010 3/	29.3	31.0	39.8	38.4	36.1	34.7	34.6	35.9	35.7	35.1	34.3	25.1
B3. US dollar GDP deflator at historical average minus one standard deviation in 2009-2010	29.3	33.3	37.3	36.2	33.9	32.4	32.7	34.3	34.6	34.9	35.0	31.9
B4. Net non-debt creating flows at historical average minus one standard deviation in 2009-2010 4/	29.3	50.4	67.1	64.5	61.0	58.7	58.1	59.3	57.6	55.0	52.3	28.3
B5. Combination of B1-B4 using one-half standard deviation shocks	29.3	45.7	71.2	68.5	64.7	62.2	61.7	63.2	61.9	59.5	56.9	33.5
B6. One-time 30 percent nominal depreciation relative to the baseline in 2009 5/	29.3	41.2	38.7	37.5	35.2	33.7	33.9	35.6	35.9	36.3	36.4	33.1
PV of debt-to-exports ratio												
Baseline	44.9	49.2	46.1	43.9	39.9	37.4	37.6	40.5	40.6	41.0	41.0	37.0
A. Alternative Scenarios												
A1. Key variables at their historical averages in 2008-2028 1/	44.9	43.1	39.2	35.6	32.4	30.1	28.5	27.4	25.7	24.6	23.5	14.1
A2. New public sector loans on less favorable terms in 2008-2028 2	44.9	48.7	45.5	43.4	39.4	37.0	36.8	40.8	41.9	43.3	44.2	47.8
B. Bound Tests												
B1. Real GDP growth at historical average minus one standard deviation in 2009-2010	44.9	49.2	46.1	43.9	39.9	37.4	37.6	40.5	40.6	41.0	41.0	37.0
B2. Export value growth at historical average minus one standard deviation in 2009-2010 3/	44.9	54.5	85.5	81.2	74.1	69.8	69.3	73.6	72.9	71.5	69.7	50.8
B3. US dollar GDP deflator at historical average minus one standard deviation in 2009-2010	44.9	49.2	46.1	43.9	39.9	37.4	37.6	40.5	40.6	41.0	41.0	37.0
B4. Net non-debt creating flows at historical average minus one standard deviation in 2009-2010 4/	44.9	85.1	112.7	106.6	97.7	92.2	90.8	95.1	91.9	87.7	83.1	44.7
B5. Combination of B1-B4 using one-half standard deviation shocks	44.9	67.1	100.2	94.8	86.8	81.9	80.8	84.9	82.6	79.4	75.7	44.3
B6. One-time 30 percent nominal depreciation relative to the baseline in 2009 5/	44.9	49.2	46.1	43.9	39.9	37.4	37.6	40.5	40.6	41.0	41.0	37.0
PV of debt-to-revenue ratio												
Baseline	100.8	112.7	102.6	97.4	90.9	85.4	85.6	89.5	88.1	88.2	87.9	76.0
A. Alternative Scenarios												
A1. Key variables at their historical averages in 2008-2028 1/	100.8	98.7	87.4	79.1	73.9	68.6	64.9	60.6	55.8	52.9	50.4	29.0
A2. New public sector loans on less favorable terms in 2008-2028 2	100.8	111.6	101.4	96.2	89.8	84.4	83.8	90.2	91.0	93.2	95.0	98.1
B. Bound Tests												
B1. Real GDP growth at historical average minus one standard deviation in 2009-2010	100.8	116.7	112.5	106.8	99.7	93.6	93.8	98.1	96.6	96.7	96.4	83.3
B2. Export value growth at historical average minus one standard deviation in 2009-2010 3/	100.8	120.0	148.9	140.8	132.0	124.3	123.4	127.2	123.7	120.4	116.9	81.4
B3. US dollar GDP deflator at historical average minus one standard deviation in 2009-2010	100.8	128.7	139.6	132.5	123.7	116.1	116.4	121.7	119.8	120.0	119.6	103.4
B4. Net non-debt creating flows at historical average minus one standard deviation in 2009-2010 4/	100.8	194.9	251.1	236.4	222.7	210.3	206.9	210.3	199.5	188.8	178.4	91.7
B5. Combination of B1-B4 using one-half standard deviation shocks	100.8	176.7	266.5	251.2	236.3	223.0	219.8	224.2	214.2	204.1	194.2	108.6
B6. One-time 30 percent nominal depreciation relative to the baseline in 2009 5/	100.8	159.2	144.9	137.6	128.4	120.6	120.8	126.4	124.4	124.6	124.2	107.3

(To be continued on the next page)

Table 3b. Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2008–28 (continued)
(In percent)

	Projections											
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2028
Debt service-to-exports ratio												
Baseline	2.4	3.0	2.7	2.5	2.3	2.0	2.0	2.2	2.5	2.8	3.0	3.9
A. Alternative Scenarios												
A1. Key variables at their historical averages in 2008-2028 1/	2.4	2.9	2.6	2.3	2.0	1.8	1.7	1.8	1.8	1.8	1.8	1.7
A2. New public sector loans on less favorable terms in 2008-2028 2	2.4	3.0	2.8	2.7	2.5	2.3	2.2	2.2	2.3	2.5	2.6	2.9
B. Bound Tests												
B1. Real GDP growth at historical average minus one standard deviation in 2009-2010	2.4	3.0	2.7	2.5	2.3	2.0	2.0	2.2	2.5	2.8	3.0	3.9
B2. Export value growth at historical average minus one standard deviation in 2009-2010 3/	2.4	3.1	3.6	4.1	3.7	3.4	3.3	3.6	4.2	5.7	5.9	6.0
B3. US dollar GDP deflator at historical average minus one standard deviation in 2009-2010	2.4	3.0	2.7	2.5	2.3	2.0	2.0	2.2	2.5	2.8	3.0	3.9
B4. Net non-debt creating flows at historical average minus one standard deviation in 2009-2010 4/	2.4	3.0	3.9	4.8	4.3	3.9	3.8	4.1	6.1	8.0	8.0	6.5
B5. Combination of B1-B4 using one-half standard deviation shocks	2.4	2.8	3.6	4.4	3.9	3.6	3.5	3.7	5.2	7.0	7.0	6.0
B6. One-time 30 percent nominal depreciation relative to the baseline in 2009 5/	2.4	3.0	2.7	2.5	2.3	2.0	2.0	2.2	2.5	2.8	3.0	3.9
Debt service-to-revenue ratio												
Baseline	5.4	6.8	6.1	5.7	5.1	4.6	4.5	4.9	5.5	6.0	6.5	7.9
A. Alternative Scenarios												
A1. Key variables at their historical averages in 2008-2028 1/	5.4	6.7	5.8	5.2	4.6	4.1	3.9	4.0	3.8	3.8	3.9	3.5
A2. New public sector loans on less favorable terms in 2008-2028 2	5.4	6.8	6.2	6.0	5.7	5.2	4.9	4.9	5.1	5.3	5.6	6.0
B. Bound Tests												
B1. Real GDP growth at historical average minus one standard deviation in 2009-2010	5.4	7.1	6.7	6.2	5.6	5.1	5.0	5.4	6.0	6.5	7.1	8.7
B2. Export value growth at historical average minus one standard deviation in 2009-2010 3/	5.4	6.8	6.3	7.2	6.6	6.0	5.8	6.2	7.1	9.5	9.8	9.6
B3. US dollar GDP deflator at historical average minus one standard deviation in 2009-2010	5.4	7.8	8.3	7.7	7.0	6.3	6.2	6.7	7.5	8.1	8.8	10.8
B4. Net non-debt creating flows at historical average minus one standard deviation in 2009-2010 4/	5.4	6.8	8.7	10.6	9.8	8.9	8.7	9.0	13.3	17.3	17.1	13.3
B5. Combination of B1-B4 using one-half standard deviation shocks	5.4	7.3	9.5	11.6	10.7	9.8	9.5	9.9	13.5	18.1	18.1	14.8
B6. One-time 30 percent nominal depreciation relative to the baseline in 2009 5/	5.4	9.6	8.6	8.0	7.3	6.5	6.4	6.9	7.8	8.4	9.1	11.2
Memorandum item:												
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0

Source: Staff projections and simulations.

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