INTERNATIONAL MONETARY FUND

REPUBLIC OF TAJIKISTAN

Debt Sustainability Analysis Under the Debt Sustainability Framework for Low Income Countries

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Based on the external low income country (LIC) debt sustainability analysis (DSA), Tajikistan's risk of debt distress remains high.[1] *Under the baseline scenario, external debt burden indicators in present value terms remain below their respective indicative thresholds, with the exception of the debt-to-exports ratio. Stress tests within the public DSA demonstrate the sensitivity of the fiscal position with respect to a slightly lower long run growth rate and the necessity of the assumed fiscal consolidation. The DSA results thus underscore the need for: i) the planned fiscal consolidation; ii) caution in contracting new debt; and iii) careful cost-benefit assessment of large-scale investment projects, to make sure that external resources are used productively. Furthermore, a one-off increase in the government's debt obligations, e.g. related to existing contingent liabilities, would push the debt-to-GDP ratio higher, but would not put the country on an unsustainable debt path in the long run. Sound macroeconomic policies and acceleration of structural reforms would also be needed to strengthen Tajikistan's growth potential and safeguard external stability.*

I. BACKGROUND

1. **While declining significantly over the last decade, Tajikistan's debt burden remains high.** Tajikistan's external debt[2] to GDP ratio decreased from slightly over 100 percent in 2000 to about 34½ percent in 2010. A debt-for-equity swap with Russia in 2004 reduced considerably the debt burden and tilted the composition of debt toward multilaterals. Against the backdrop of a sharp increase in loans from China since 2007, the share of bilateral creditors picked up rapidly. As of end-2010, Tajikistan's external debt is

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[1] The DSA has been produced jointly by World Bank and IMF staff, in consultation with Asian Development Bank staff. It updates the last DSA of May 2010 presented in the IMF Staff Report for the First and Second Review under the Extended Credit Facility (EBS/10/95, 05/24/2010). The fiscal year for Tajikistan is January 1–December 31.

[2] Tajikistan's public and publicly guaranteed external debt covers the general government and both guaranteed and non-guaranteed debt of SOEs (state-owned enterprises).

largely concessional and held in broadly equal parts between multilateral and bilateral creditors, with the share of China quite prominent at about 38 percent. The share of commercial creditors is small.[3]

2. **Domestic debt has constituted a very small part of overall public debt owing to low primary fiscal deficits (excluding the externally financed public investment program) and a shallow government securities market.** Domestic debt represented about 2 percent of GDP (6 percent of total public debt) at end-2010, consisting mostly of nontradable government securities held by the National Bank of Tajikistan (NBT). Since 2009, the government has undertaken regular issuance of Treasury-bills (T-bills), but only in small amounts, with short maturity, and at rates below the current NBT refinancing rate.[4] Moreover, eight-year government bonds were issued to commercial banks in 2010 as part of the cotton debt resolution with rollover provisions and an interest rate of only 2 percent.

3. **The present value (PV) of public and publicly guaranteed (PPG) external debt at end-2010 was higher than projected in the last DSA, mainly on account of higher external borrowing.** PPG external debt came to about 34½ percent of GDP at end-2010—roughly 2½ percent of GDP higher than projected in the last DSA update.

4. **The current DSA concludes that Tajikistan's risk of debt distress remains high** (see Figure 1).[5] The PV of PPG external debt to exports of goods and services stood at 147 percent at end-2010, significantly above its threshold, and prolonged breaches of the threshold throughout the projection period are anticipated. Other debt burden indicators are projected to remain below their respective thresholds under the baseline scenario. In Tajikistan, remittance inflows have become the most prominent source of foreign exchange earnings through a dramatic structural increase from less than 10 percent of GDP in 2003 to

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[3] In addition, the authorities accumulated a trivial amount of arrears, which are not taken into account in this DSA as they do not have any macroeconomic impact. External payments arrears were accumulated in 2010 on two loans guaranteed by the government. For the first loan, arrears reached a maximum of Euro 103,032 (US$148,428) during the course of the year. Original payment arrears were cleared by end-August 2010, and penalty interest was cleared by end-December. For the second loan, arrears of US$216 was cleared in January 2011.

[4] In 2010, the total level of issuance was less than 0.3 percent of GDP.

[5] According to the latest three-year average of the World Bank's CPIA rating (2007–09) of 3.2, Tajikistan's policies and institutions are assessed as those corresponding to a "weak performer."Three-year average of CPIA ratings is used according to recently issued joint Bank-Fund Staff Guidance Note on the Application of the joint Bank-Fund Debt Sustainability Framework (October 2008). These guidelines aim at a less volatile assessment of risk than that based on a single latest CPIA rating. The thresholds for the debt burden for weak performers are 100, 30 and 200 for the NPV of debt to exports, GDP and revenue respectively; debt service thresholds are 15 and 25 percent of exports and revenue, respectively. In the scenarios that include remittances, the thresholds have been revised downward by 10 percent so the corresponding threshold for NPV of debt and debt service to exports and remittances is 90 percent and is 13½ respectively.

almost 40 percent in 2010 (after posting a pre-global crisis peak of 49 percent of GDP in 2008). However, projected prolonged breaches of the original threshold for the NPV of debt-to-exports ratio under the baseline scenario and stress tests preclude the incorporation of remittances in the debt sustainability assessment.[6] If debt burden indicators incorporating remittances in the denominator are used, Tajikistan's risk of debt distress would likely be reduced to medium (see Figure 2).

II. UNDERLYING DSA ASSUMPTIONS

5. **The macroeconomic framework over the medium term is broadly comparable to the one presented in the last DSA and is described in more detail in Box 1.**

- Tajikistan's underlying growth potential is projected to be about 5 percent, broadly comparable to the last DSA. Real GDP growth in 2010 turned out stronger than projected at 6½ percent, supported by robust growth in remittances and a pickup in manufacturing and construction.
- On account of anticipated terms of trade shocks in 2011 and 2012, a modest depreciation of the real effective exchange rate is incorporated, which would help bring the current account balance towards its estimated medium-term norm.[7]
- Medium- and long-term projections for growth in nondebt creating flows are comparable to the last DSA (see Table 1a).
- Underlying assumptions for the fiscal projections are that the government budget deficit (excluding Public Investment Program) of about 1 percent of GDP in 2011 will be eliminated in the medium term and beyond. This seems feasible based on current spending plans and revenue projections.

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[6] Staff Guidance Note on the Application of the Joint Bank-Fund Debt Sustainability Framework for Low Income Countries (Jan 25, 2010 available from http://www.imf.org/external/pp/longres.aspx?id=4419) identifies the maximum permissible length of the breach of the thresholds as 10 years starting from the current period, i.e., half of the projection period.

[7] Based on the Methodology for the Consultative Group on Exchange Rate Issues (CGER) Exchange Rate Assessments (November 8, 2010 available from http://www.imf.org/external/np/pp/eng/2006/110806.pdf).

Box 1. Tajikistan: Macroeconomic Assumptions

Real GDP growth is projected at 5¾ percent in 2011, and at 5 percent beyond 2011. These figures are significantly below their ten-year historical average of 8 percent (2001–10). The historical output trajectory was supported by fast growth in the aftermath of the civil war, a sharp structural increase in remittances during 2004–08, and a benign global environment for the most part of the historical base. Expected long-term growth will be driven primarily by exports once investment in the energy sector is completed and structural reforms trigger a more dynamic private sector. The U.S. dollar GDP deflator is projected to increase from 6 percent in 2010 to 12 percent in 2011, but expected to decelerate to about 3 percent through 2031 reflecting progress toward a low-inflation environment while assuming no commodity price shocks beyond the medium term.

Export of goods and services is expected to pick up to an average of 9 percent during 2011–16, despite a projected sharp deceleration in 2012 on account of an anticipated adverse shock to cotton prices. Expansion in nontraditional agriculture sectors and increase in energy exports would support this growth. An average growth rate of about 7¾ percent is projected for 2016–31 as export will be supported by completion of the infrastructure projects in the energy sector and progress with structural reforms, including in the agriculture sector and improvement in the business environment.

The external current account posted a surplus of 2¼ percent of GDP in 2010. However, the improvement is expected to be temporary with the current account reverting to a deficit of 3¾ percent of GDP in 2011 in light of anticipated adverse terms of trade shocks (higher food and fuel prices), the full year impact of Russian export duties on fuel (imposed in May 2010), and the reversal of the one-off factors that curbed imports in 2010 (intermittent blockade of rail transit during the first half of 2010 and a slowdown in external disbursements for the Public Investment Program). A projected significant drop in cotton prices in 2012 would add to the balance of payments pressures. Reflecting these adverse shocks, a modest depreciation of the real effective exchange rate that would help bring the current account balance close to its medium-term norm is factored in. During 2012–15 external borrowing on concessional terms to finance the construction of Roghun HPP is incorporated. Owing to its high import content, the current account deficit is expected to rise temporarily to a range of 6–7 percent of GDP. Beyond the medium term, the current account balance is expected to improve gradually. **Reserve coverage** is projected to build up gradually to about 3¼ months of imports by 2031.

Fiscal policy is assumed to aim for an overall balance (excluding the externally financed public investment program) over the medium term and beyond, after modest deficits in 2009–11.

External assistance. Official external loan financing on concessional terms is estimated to decline from 4¾ percent of GDP in 2011 to 2¾ percent of GDP through 2031. The grant element of new external debt is assumed to decline slightly to 31 percent from 35 percent over the projection horizon.

Public domestic debt. A modest increase in domestic debt to GDP ratio is assumed from about 2 percent to 5½ percent by 2017 and gradually declining to 4 percent by 2031.

Real interest rates. For domestic debt, it is expected that real interest rate becomes slightly positive starting 2016.

III. EXTERNAL DSA

A. Baseline

6. **Under the baseline scenario, only one of Tajikistan's external debt burden indicators, the PV of debt-to-exports ratio, is projected to breach the indicative policy-dependent thresholds significantly and for a protracted period of time** (see Figure 1 and Table 1a). The debt-to-exports ratio will peak at 178 percent in 2015, exceeding the threshold of 100 percent significantly. After that, it is projected to decrease gradually throughout 2031. However, during the entire projection period the threshold will be breached by a wide margin.

7. **External debt service ratios are expected to stay below their thresholds over the entire period.** During the projection period, debt service payments continue to be manageable, albeit spiking during the years when principal payments on loans from China fall due. As a result, from 2016 to 2019, the debt service-to-export trajectory approaches the indicative threshold. It is assumed that all of Tajikistan's external public and publicly guaranteed debt is contracted on concessional terms.

B. Alternative Scenarios and Stress Tests

8. **Under the historical scenario, the debt burden indicators are significantly lower than under the baseline scenario.** The historical scenario is based on averages from 2001 to 2010,[8] during which the current account deficit was relatively low—at below 3 percent of GDP, and growth was much stronger. Therefore, under this scenario, all debt burden ratios—excluding the PV of debt-to-exports ratio—remain well below the baseline trajectory and follow a downward trend throughout the projection period.

9. **A high-investment low-growth scenario underscores the risk to debt sustainability if growth dividends are less than projected** (see Table 1b). The scenario demonstrates that, starting in 2012, when growth is reduced by half due to lower-than-expected productivity of investments, all ratios deteriorate notably, with the ratio of the PV of debt-to-GDP approaching its sustainability threshold by the end of projection period. The ratio of the PV of debt-to-exports deteriorates even further. Nevertheless, the growth projections under the baseline are already cautious and no significant growth impact from the completion of Roghun HPP and other energy projects are incorporated. Consequently, a high-investment low-growth scenario may prove pessimistic.

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[8] For exports and noninterest current account averages for only 2006–10 were used due to a break in the export series reflecting a change in the treatment of exports of aluminum in the current account. For all others, the usual ten-year historical average was applied.

10. **A scenario assuming contracting external debt on less favorable terms would lead to a significant deterioration of Tajikistan's external debt indicators compared to the baseline scenario.** If all new borrowing were to be contracted on less favorable terms during the projection period, Tajikistan's PV of debt-to-export ratio would rise substantially. Specifically, with the increase in the average interest rate on new disbursements by 2 percentage points, the PV of debt-to-GDP ratio would rise continuously and breach the threshold starting in 2030, and the PV of debt-to-exports ratio would increase further from levels projected under the baseline and stay above the threshold.

11. **Bound tests show that adverse macroeconomic shocks would also have a profound negative impact on Tajikistan's external position.** In the event of a shock to nondebt creating inflows, all ratios, except debt service-to-revenues, exceed the indicative policy-dependent thresholds by a significant margin and almost all of them remain above the thresholds throughout the projection period.

IV. Public DSA

12. **The baseline trajectory in the public sector DSA is very similar to the trajectory in of the external DSA, given that public sector domestic debt is small.** The most extreme stress test is embodied in a lower long run growth compared to the baseline. In other words, a growth rate 0.5 percentage points smaller compared to the one assumed in the baseline would result in ever-increasing trajectories of all solvency and liquidity debt burden measures in the public template. This stress reflects the sensitivity of fiscal sustainability to the underlying growth assumption. Another important stress test in the public sector DSA includes the impact of the government facing a contingent liability notionally equal to 10 percent of GDP.[9] In this scenario, the PV of debt-to-GDP ratio peaks at 40 in 2015, indicating considerable risks to debt sustainability from contingent fiscal liabilities. Under low growth and/or fixed primary balance scenarios public debt is unsustainable (see Figure 3). This highlights the importance of relying fully on concessional financing and risks associated with diverging from the fiscal consolidation assumed in the baseline scenario.

V. Debt Distress Classification and Conclusions

13. **The current DSA concludes that Tajikistan's risk of debt distress remains high.** The PV of PPG external debt to exports of goods and services breaches the indicative threshold significantly throughout the projection period. Other debt burden indicators are projected to remain below their respective thresholds under the baseline scenario.

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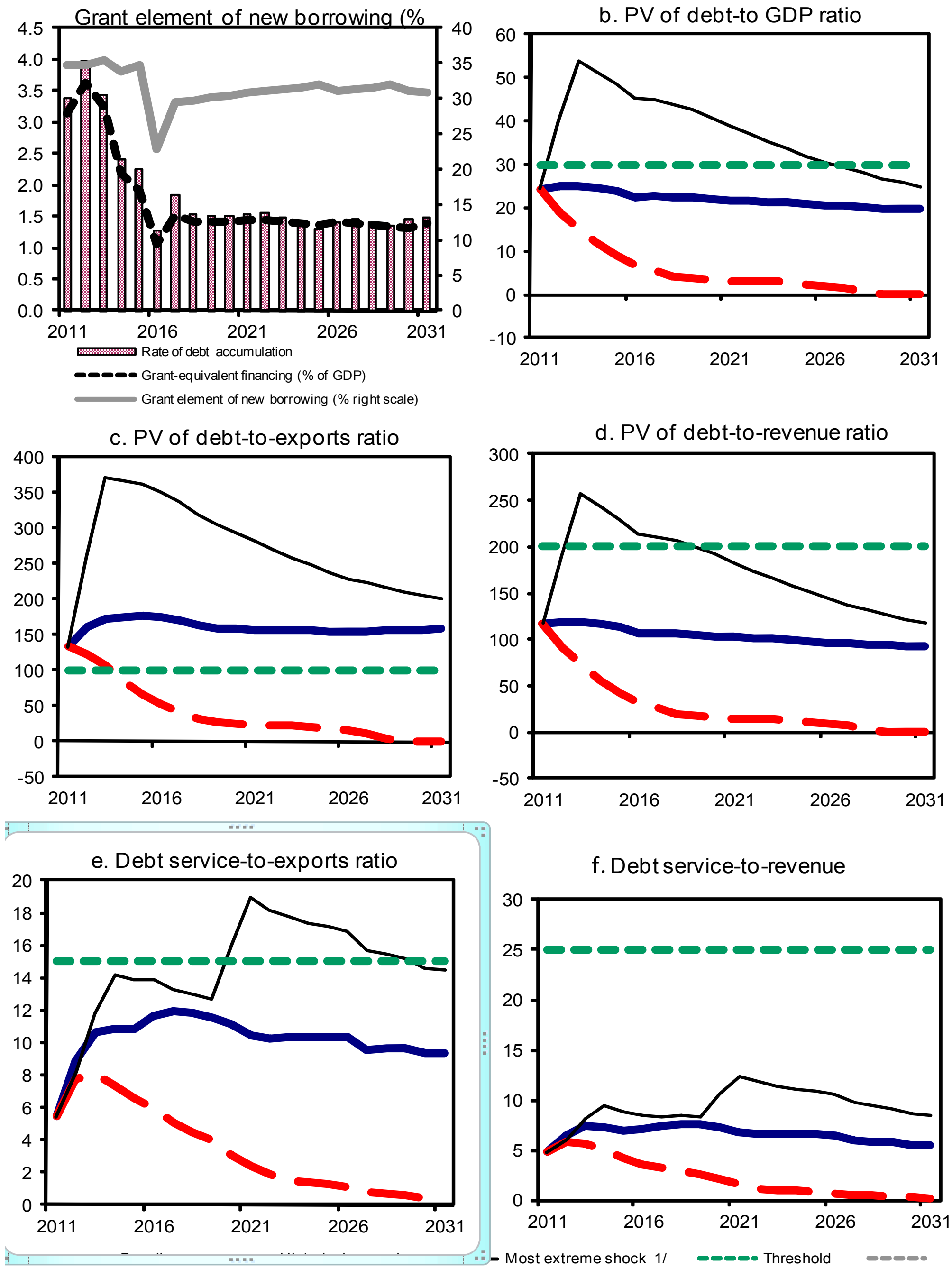
[9] Possible contingent fiscal liabilities stem from nonperforming loans in the financial system and arrears (tax and inter-enterprise) in the state enterprises. The figure of 10 percent of GDP is notional, but likely represents an outer bound for potential fiscal costs.

14. **The results of the alternative scenarios and stress tests indicate that the debt sustainability situation could further deteriorate**. A modestly lower long run growth rate, borrowing on less favorable terms of financing or absence of a fiscal consolidation could result in an unsustainable debt burden trajectory. The DSA results thus underscore the need for fiscal consolidation and extreme caution in contracting new debt and to carefully vet large-scale investment projects, to make sure that external resources are used productively. Sound macroeconomic policies and acceleration of structural reforms would also be essential for maintaining debt sustainability by strengthening Tajikistan's growth potential and safeguarding external stability. Going forward, continued emphasis should also be placed on strengthening debt management capacity by closely monitoring the debts of the state-owned enterprises (SOEs), assessing potential contingent liabilities arising from the financial sector and quasi-fiscal activities of SOEs. The mission highly recommended the authorities to undertake the Debt Management and Performance Assessment (DEMPA) to identify and address weaknesses in various aspects of Tajikistan's debt management institutions and practices.

15. **The authorities concurred with the conclusions of the DSA exercise.** The External Debt Unit at the Ministry of Finance has received technical assistance to improve the in-house capacity for debt sustainability assessment. The authorities' results were in agreement with the staff findings. In response to the authorities' request, a World Bank DEMPA mission will take place during April 14–24, 2011. Staff welcomed the authorities' voluntary and swift action in this area that will help facilitate assessment of the strengths and weaknesses in debt management and design of actionable reform plans to improve debt management capacity.

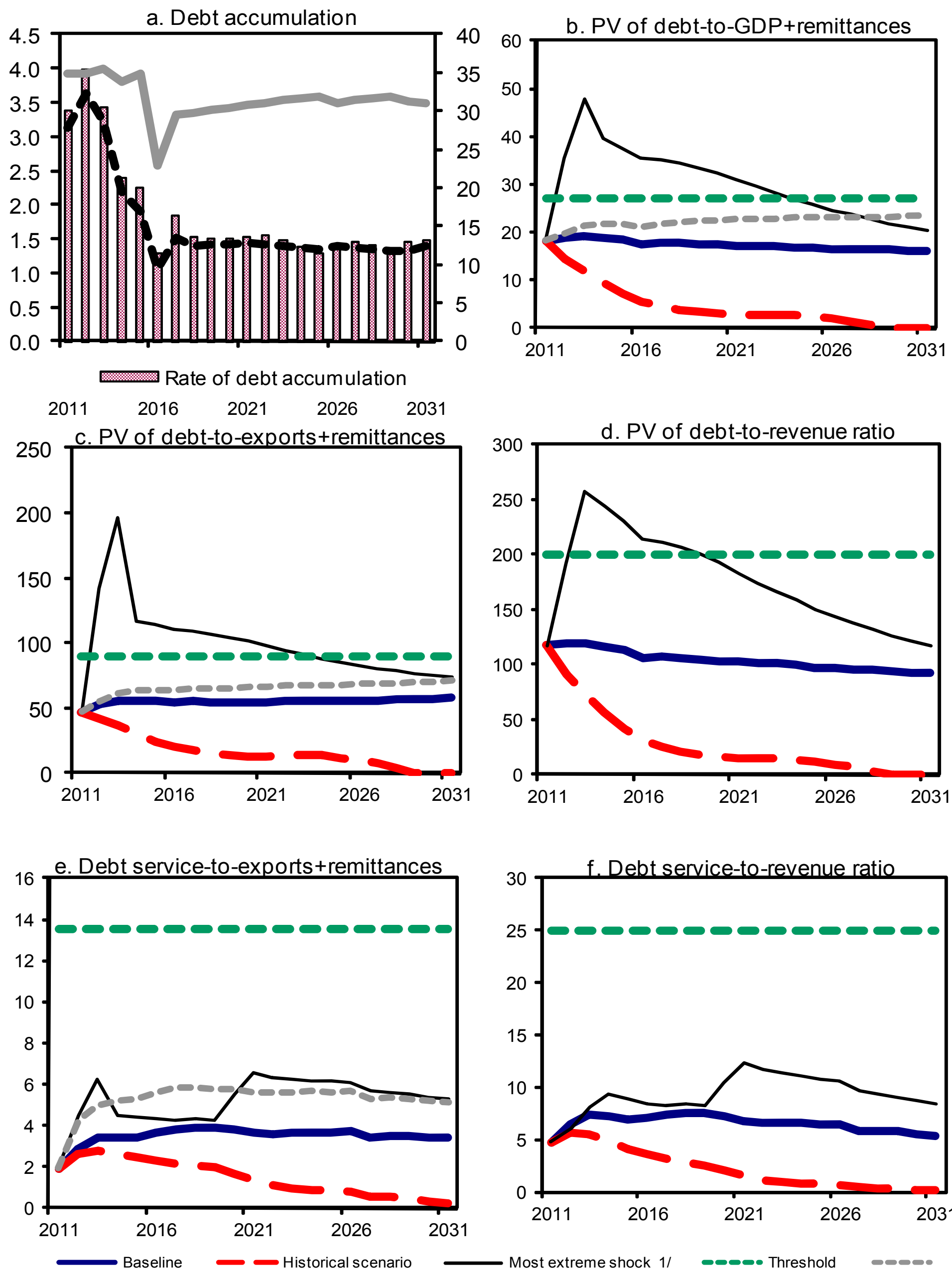
Figure 1. Tajikistan: Indicators of Public and Publicly Guaranteed External Debt under Alternatives Scenarios, 2011 - 2031 1/



Sources: Country authorities; and IMF staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in 2021. In all figures it corresponds to a nondebt creating flows shock.

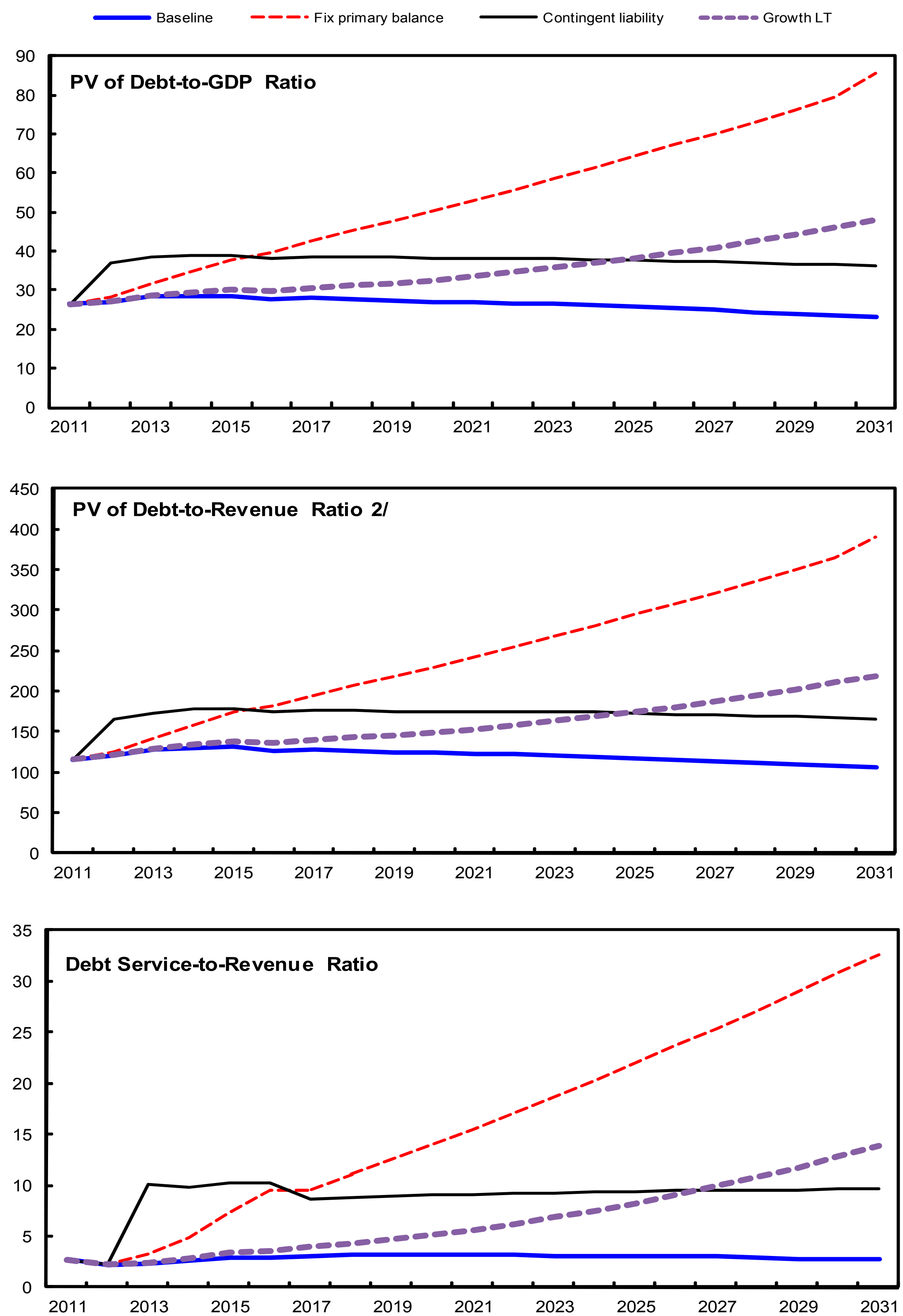
Figure 2. Tajikistan: Indicators of Public and Publicly Guaranteed External Debt under Alternatives Scenarios Incorporating Remittances, 2011 - 2031 1/



Sources: Country authorities; and IMF staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in 2021. In all figures it corresponds to a nondebt creating flows shock.

Figure 3. Tajikistan: Indicators of Public Debt Under Alternative Scenarios, 2011 - 2031 1/



Sources: Country authorities; and IMF staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in 2021.

2/ Revenues are defined inclusive of grants.

Table 1a.: External Debt Sustainability Framework, Baseline Scenario, 2008-2030 1/
(In percent of GDP, unless otherwise indicated)

	Actual											Historical Average 6/	Standard Deviation 6/	Projections									
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010			2011	2012	2013	2014	2015	2016	2011-2016 Average	2021	2031	2017-2031 Average
External debt (nominal) 1/	**149.5**	**130.3**	**113.6**	**81.5**	**57.4**	**52.6**	**44.0**	**41.2**	**46.5**	**53.5**	**53.8**			**49.4**	**49.8**	**50.9**	**50.6**	**50.0**	**47.4**	**49.7**	**41.4**	**32.3**	**38.8**
o/w public and publicly guaranteed (PPG)	123.4	105.6	91.8	64.3	43.9	40.5	34.2	34.0	29.4	35.9	34.6			32.1	33.3	34.0	33.5	32.8	30.5	32.7	29.2	26.4	28.3
Change in external debt	...	-19.2	-16.7	-32.1	-24.1	-4.9	-8.6	-2.8	5.4	7.0	0.2			-4.3	0.4	1.0	-0.2	-0.6	-2.6	-1.1	-1.3	-0.6	-1.0
Identified net debt-creating flows	...	-6.2	-17.0	-26.6	-29.6	-6.5	-8.9	-6.3	-9.6	7.0	-9.2			-0.4	2.4	1.1	0.6	0.7	-1.4	0.5	-2.7	-0.5	-2.0
Non-interest current account deficit	**-1.4**	**-0.8**	**-0.9**	**-3.4**	**1.0**	**-0.2**	**0.5**	**6.8**	**6.4**	**4.5**	**-3.4**	**1.1**	**3.7**	**2.5**	**6.0**	**5.2**	**4.8**	**4.8**	**3.3**	**4.4**	**2.3**	**2.4**	**2.3**
Deficit in balance of goods and services	1.9	10.8	10.8	10.1	11.6	25.8	34.2	48.2	55.3	39.3	34.9			38.1	39.1	37.0	35.8	34.7	32.1	36.1	28.9	24.3	27.5
Exports	89.0	71.1	66.8	63.4	58.4	27.0	23.3	20.7	16.8	15.2	17.2			18.3	15.4	14.5	14.1	13.5	12.9	14.8	13.8	12.5	13.4
Imports	90.9	82.0	77.6	73.5	70.0	52.8	57.5	68.8	72.1	54.5	52.1			56.4	54.4	51.5	49.8	48.2	45.1	50.9	42.8	36.8	40.9
Net current transfers (negative = inflow)	-4.0	-10.7	-12.0	-14.6	-11.4	-27.5	-35.0	-41.9	-48.7	-34.8	-38.3	**-27.5**	**14.3**	-35.3	-32.9	-31.6	-30.7	-29.6	-28.6	-31.4	-26.2	-21.6	-24.8
o/w official	-4.0	-8.4	-8.2	-7.9	-3.3	-3.5	-2.9	-1.8	-3.1	-2.4	-2.2			-1.8	-1.1	-0.8	-0.7	-0.3	-0.3	-0.8	-0.1	-0.1	-0.1
Other current account flows (negative = net inflow)	0.7	-1.0	0.3	1.2	0.8	1.5	1.3	0.6	-0.2	0.0	0.0			-0.3	-0.2	-0.2	-0.3	-0.3	-0.3	-0.2	-0.4	-0.4	-0.4
Net FDI (negative = inflow)	**-2.5**	**-0.9**	**-3.0**	**-2.0**	**-13.1**	**-2.4**	**-2.3**	**-4.3**	**-5.8**	**-0.3**	**-0.9**	**-3.5**	**3.8**	**-1.6**	**-2.4**	**-3.0**	**-3.0**	**-3.0**	**-3.5**	**-2.8**	**-4.0**	**-2.0**	**-3.3**
Endogenous debt dynamics 2/	**...**	**-4.5**	**-13.1**	**-21.2**	**-17.6**	**-4.0**	**-7.0**	**-8.8**	**-10.2**	**2.9**	**-5.0**			**-1.4**	**-1.1**	**-1.2**	**-1.2**	**-1.2**	**-1.2**	**-1.2**	**-1.1**	**-0.9**	**-1.0**
Residual (3-4) 3/	**...**	**-13.0**	**0.3**	**-5.5**	**5.5**	**1.7**	**0.3**	**3.5**	**14.9**	**0.0**	**9.5**			**-3.9**	**-2.0**	**0.0**	**-0.9**	**-1.3**	**-1.1**	**-1.5**	**1.4**	**-0.1**	**1.0**
o/w exceptional financing	...	-1.4	1.9	0.0	-0.6	0.0	0.0	0.0	0.0	-0.3	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PV of external debt 4/	...	...	...	...	...	...	...	...	...	...	44.3			41.7	41.4	41.9	41.7	41.1	39.4	41.2	34.0	25.6	31.6
In percent of exports	...	...	...	...	...	...	...	...	...	...	258.0			227.7	269.4	288.2	296.6	304.8	304.7	281.9	246.3	205.7	235.9
PV of PPG external debt	**...**	**...**	**...**	**...**	**...**	**...**	**...**	**...**	**...**	**...**	**25.2**			**24.4**	**24.9**	**25.0**	**24.5**	**23.9**	**22.5**	**24.2**	**21.8**	**19.7**	**21.1**
In percent of exports	**...**	**...**	**...**	**...**	**...**	**...**	**...**	**...**	**...**	**...**	**146.6**			**133.3**	**162.0**	**172.1**	**174.4**	**177.6**	**174.0**	**165.5**	**157.9**	**158.4**	**158.2**
In percent of government revenues	**...**	**...**	**...**	**...**	**...**	**...**	**...**	**...**	**...**	**...**	**120.8**			**117.8**	**119.1**	**119.3**	**116.4**	**113.1**	**106.0**	**115.3**	**102.7**	**92.8**	**99.5**
Debt service-to-exports ratio (in percent)	**6.6**	**13.5**	**13.3**	**11.2**	**28.1**	**17.3**	**32.7**	**13.2**	**15.1**	**26.6**	**12.0**			**9.0**	**13.0**	**15.0**	**15.5**	**15.6**	**16.6**	**14.1**	**14.0**	**11.2**	**13.5**
PPG debt service-to-exports ratio (in percent)	**...**	**...**	**10.4**	**8.2**	**25.9**	**14.5**	**26.8**	**8.8**	**14.2**	**21.3**	**7.9**			**5.4**	**8.9**	**10.6**	**10.9**	**10.8**	**11.7**	**9.7**	**10.5**	**9.3**	**10.4**
PPG debt service-to-revenue ratio (in percent)	**...**	**...**	**41.5**	**30.5**	**87.6**	**20.3**	**33.0**	**8.9**	**11.7**	**16.2**	**6.5**			**4.8**	**6.5**	**7.4**	**7.2**	**6.9**	**7.1**	**6.7**	**6.8**	**5.5**	**6.6**
Total gross financing need (Billions of U.S. dollars)	...	...	...	...	0.1	0.0	0.2	0.2	0.2	0.4	-0.1			0.2	0.4	0.4	0.4	0.4	0.2	0.3	0.0	0.7	0.2
Non-interest current account deficit that stabilizes debt ratio	...	18.4	15.8	28.8	25.1	4.7	9.0	9.7	1.1	-2.5	-3.7			6.9	5.6	4.2	5.1	5.5	5.8	5.5	3.6	3.0	3.3
Key macroeconomic assumptions																							
Real GDP growth (in percent)	8.3	10.2	9.1	10.2	10.6	6.7	7.0	7.8	7.9	3.9	6.5	8.0	2.1	5.8	5.0	5.0	5.0	5.0	5.0	5.1	5.0	5.0	5.0
GDP deflator in US dollar terms (change in percent)	-15.8	-1.8	6.2	17.9	20.6	4.5	13.7	22.5	28.2	-6.6	6.3	11.1	11.2	14.5	8.2	7.6	6.2	6.7	6.7	8.3	2.9	2.9	2.8
Effective interest rate (percent) 5/	2.4	4.9	4.2	5.7	4.6	3.7	5.5	5.5	4.1	3.0	2.8	4.4	1.0	2.7	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.0	2.2
Growth of exports of G&S (US dollar terms, in percent)	18.4	-13.5	8.8	23.2	22.9	-48.4	5.2	16.8	12.8	-12.7	28.4	10.1	15.2	28.9	-4.7	7.0	7.9	7.5	7.6	9.0	7.7	6.6	7.7
Growth of imports of G&S (US dollar terms, in percent)	18.4	-2.5	9.7	22.9	27.1	-15.9	32.5	57.9	45.0	-26.7	8.3	15.8	26.5	31.0	9.7	7.0	7.9	8.3	4.9	11.5	6.7	7.5	6.5
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	...	...	...	...	...	...	...	...	34.8	34.8	35.5	33.8	34.9	22.9	32.8	30.8	31.0	31.0
Government revenues (excluding grants, in percent of GDP)	14.0	15.5	16.7	17.0	17.3	19.3	18.9	20.5	20.5	20.0	20.9			20.7	20.9	21.0	21.1	21.1	21.2	21.0	21.2	21.2	21.2
Aid flows (in Billions of US dollars) 7/	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.1			0.2	0.3	0.3	0.2	0.2	0.1	0.2	0.2	0.4	0.3
Grant-equivalent financing (in percent of GDP) 8/	...	...	...	...	...	...	...	...	...	...	...			3.1	3.6	3.2	2.2	1.9	1.0	2.5	1.4	1.4	1.4
Grant-equivalent financing (in percent of external financing) 8/	...	...	...	...	...	...	...	...	...	...	...			61.9	48.0	47.5	45.1	43.4	39.4	47.6	42.9	43.4	42.9
Memorandum items:																							
Nominal GDP (Billions of US dollars)	1.0	1.0	1.2	1.6	2.1	2.3	2.8	3.7	5.1	5.0	5.6			6.8	7.8	8.8	9.8	11.0	12.3		17.8	38.7	
Nominal dollar GDP growth	...	8.2	15.8	29.9	33.3	11.5	21.7	32.0	38.3	-3.0	13.2			21.1	13.6	13.0	11.5	12.1	12.1	13.9	8.1	8.1	8.0
PV of PPG external debt (in Billions of US dollars)											1.4			1.6	1.9	2.1	2.4	2.6	2.7		3.8	7.5	
(PVt-PVt-1)/GDPt-1 (in percent)														3.4	4.0	3.4	2.4	2.3	1.3	2.8	1.5	1.5	1.5

Sources: Country authorities; and staff estimates and projections.

1/ Includes both public and private sector external debt.

2/ Derived as [r - g - ρ(1+g)]/(1+g+ρ+gρ) times previous period debt ratio, with r = nominal interest rate; g = real GDP growth rate, and ρ = growth rate of GDP deflator in U.S. dollar terms.

3/ Includes exceptional financing (i.e., changes in arrears and debt relief); changes in gross foreign assets; and valuation adjustments. For projections also includes contribution from price and exchange rate changes.

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

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

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

7/ Defined as grants, concessional loans, and debt relief.

8/ Grant-equivalent financing includes grants provided directly to the government and through new borrowing (difference between the face value and the PV of new debt).

Table 1b.Tajikistan: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2011-2031
(In percent)

	Projections							
	2011	2012	2013	2014	2015	2016	**2021**	2031
PV of debt-to GDP ratio								
Baseline	24	25	25	25	24	23	**22**	20
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011-2031 1/	24	19	15	12	9	7	**3**	-2
A2. New public sector loans on less favorable terms in 2011-2031 /2	24	26	28	28	28	27	**29**	30
A3. Alternative Scenario : High investment-low growth	23	26	28	29	29	28	**30**	31
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012-2013	24	24	24	24	23	22	**21**	19
B2. Export value growth at historical average minus one standard deviation in 2012-2013 3/	24	24	26	25	25	23	**22**	20
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012-2013	24	26	28	28	27	26	**25**	23
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012-2013 4/	24	40	54	51	49	45	**39**	25
B5. Combination of B1-B4 using one-half standard deviation shocks	24	33	41	40	38	35	**32**	23
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	24	33	34	33	32	30	**30**	27
PV of debt-to-exports ratio								
Baseline	133	162	172	174	178	174	**158**	158
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011-2031 1/	133	123	106	85	66	52	**23**	-15
A2. New public sector loans on less favorable terms in 2011-2031 /2	133	170	191	201	211	209	**210**	242
A3. Alternative Scenario : High investment-low growth	128	177	201	213	221	222	**224**	258
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012-2013	133	157	168	171	174	170	**155**	156
B2. Export value growth at historical average minus one standard deviation in 2012-2013 3/	133	160	205	208	211	207	**186**	182
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012-2013	133	157	168	171	174	170	**155**	156
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012-2013 4/	133	260	371	366	361	350	**282**	200
B5. Combination of B1-B4 using one-half standard deviation shocks	133	199	273	271	270	262	**219**	175
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	133	157	168	171	174	170	**155**	156
PV of debt-to-revenue ratio								
Baseline	118	119	119	116	113	106	**103**	93
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011-2031 1/	118	90	74	57	42	32	**15**	-9
A2. New public sector loans on less favorable terms in 2011-2031 /2	118	125	132	134	134	127	**137**	142
A3. Alternative Scenario : High investment-low growth	113	126	134	137	135	130	**141**	145
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012-2013	118	115	114	112	109	102	**99**	90
B2. Export value growth at historical average minus one standard deviation in 2012-2013 3/	118	116	123	121	117	109	**105**	93
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012-2013	118	125	136	133	129	121	**118**	106
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012-2013 4/	118	191	258	244	230	213	**183**	117
B5. Combination of B1-B4 using one-half standard deviation shocks	118	158	197	189	179	167	**148**	107
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	118	160	161	158	153	143	**140**	126

Table 1b.Tajikistan: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2011-2031 (continued)
(In percent)

	Projections							
	2011	2012	2013	2014	2015	2016	2021	2031
Debt service-to-exports ratio								
Baseline	5	9	11	11	11	12	**10**	9
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011-2031 1/	5	8	8	7	7	6	**2**	0
A2. New public sector loans on less favorable terms in 2011-2031 /2	5	8	10	11	12	12	**13**	15
A3. Alternative Scenario : High investment-low growth	5	9	11	11	12	12	**13**	16
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012-2013	5	8	10	10	10	10	**9**	9
B2. Export value growth at historical average minus one standard deviation in 2012-2013 3/	5	8	11	12	12	12	**11**	11
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012-2013	5	8	10	10	10	10	**9**	9
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012-2013 4/	5	8	12	14	14	14	**19**	14
B5. Combination of B1-B4 using one-half standard deviation shocks	5	8	10	12	12	12	**14**	12
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	5	8	10	10	10	10	**9**	9
Debt service-to-revenue ratio								
Baseline	5	7	7	7	7	7	**7**	5
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011-2031 1/	5	6	6	5	4	4	**2**	0
A2. New public sector loans on less favorable terms in 2011-2031 /2	5	6	7	7	7	7	**8**	9
A3. Alternative Scenario : High investment-low growth	4	6	7	7	7	7	**8**	9
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012-2013	5	6	7	7	6	6	**6**	5
B2. Export value growth at historical average minus one standard deviation in 2012-2013 3/	5	6	7	7	6	6	**6**	6
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012-2013	5	7	8	8	7	7	**7**	6
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012-2013 4/	5	6	8	9	9	8	**12**	8
B5. Combination of B1-B4 using one-half standard deviation shocks	5	6	8	8	8	7	**10**	7
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	5	8	9	9	9	8	**8**	8
Memorandum item:								
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	30	30	30	30	30	30	**30**	30

Sources: Country authorities; and IMF staff estimates and projections.

1/ Variables include real GDP growth, growth of GDP deflator (in U.S. dollar terms), non-interest current account in percent of GDP, and non-debt creating flows.
2/ Assumes that the interest rate on new borrowing is by 2 percentage points higher than in the baseline., while grace and maturity periods are the same as in the baseline.
3/ Exports values are assumed to remain permanently at the lower level, but the current account as a share of GDP is assumed to return to its baseline level after the shock (implicitely 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. Tajikistan: Public Sector Debt Sustainability Framework, Baseline Scenario, 2009-2031
(In percent of GDP, unless otherwise indicated)

	Actual					Projections						
	2009	2010	2011	2012	2013	2014	2015	2016	2011-16 Average	2021	2031	2017-31 Average
Public sector debt 1/	36.6	36.7	34.2	35.5	37.3	37.6	37.5	35.6		34.2	29.8	
o/w foreign-currency denominated	35.9	34.6	32.1	33.3	34.0	33.5	32.8	30.5		29.2	26.4	
Change in public sector debt	6.4	0.1	-2.4	1.3	1.8	0.3	-0.1	-1.9		-0.3	-0.5	
Identified debt-creating flows	7.7	-1.0	-0.1	-0.5	-1.1	-1.6	-1.9	-1.4		0.3	-2.4	
Primary deficit	4.7	3.1	4.8	3.6	2.8	1.9	1.7	2.2	2.4	2.3	-0.6	2.0
Revenue and grants	23.4	23.2	22.8	22.4	22.2	21.9	21.7	21.8		21.8	21.8	
of which: grants	3.4	2.3	2.1	1.5	1.3	0.8	0.6	0.6		0.6	0.6	
Primary (noninterest) expenditure	28.1	26.2	27.6	26.0	25.0	23.8	23.4	24.0		24.1	21.2	
Automatic debt dynamics	3.0	-5.2	-4.8	-4.0	-3.8	-3.5	-3.5	-3.6		-2.0	-1.8	
Contribution from interest rate/growth differential	-1.1	-2.3	-2.3	-2.0	-2.0	-2.1	-2.1	-2.2		-1.8	-1.5	
Contribution from real exchange rate depreciation	4.1	-2.9	-2.6	-2.0	-1.8	-1.4	-1.4	-1.4		...	...	
Other identified debt-creating flows	-0.1	1.1	-0.1	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Residual, including asset changes	-1.3	1.0	-2.3	1.7	2.8	1.9	1.8	-0.5		-0.6	1.9	
Other Sustainability Indicators												
PV of public sector debt	0.7	27.2	26.5	27.0	28.3	28.6	28.6	27.6		26.8	23.1	
o/w foreign-currency denominated	0.0	25.2	24.4	24.9	25.0	24.5	23.9	22.5		21.8	19.7	
o/w external	...	25.2	24.4	24.9	25.0	24.5	23.9	22.5		21.8	19.7	
Gross financing need 2/	5.4	3.7	5.4	4.1	3.3	2.5	2.3	2.8		3.0	-0.1	
PV of public sector debt-to-revenue and grants ratio (in percent)	3.2	117.6	116.0	120.6	127.3	130.7	131.5	126.4		122.9	105.8	
PV of public sector debt-to-revenue ratio (in percent)	3.7	130.5	127.8	129.5	135.0	135.9	135.0	129.8		126.3	108.7	
o/w external 3/	…	120.8	117.8	119.1	119.3	116.4	113.1	106.0		102.7	92.8	
Debt service-to-revenue and grants ratio (in percent) 4/	3.0	2.8	2.7	2.2	2.3	2.6	2.9	2.9		3.1	2.7	
Debt service-to-revenue ratio (in percent) 4/	3.5	3.1	3.0	2.3	2.4	2.7	3.0	3.0		3.2	2.8	
Primary deficit that stabilizes the debt-to-GDP ratio	-1.6	3.0	7.2	2.3	1.0	1.7	1.8	4.1		2.6	-0.2	
Key macroeconomic and fiscal assumptions												
Real GDP growth (in percent)	3.9	6.5	5.8	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Average nominal interest rate on forex debt (in percent)	2.1	1.9	1.8	1.4	1.4	1.4	1.5	1.4	1.4	1.5	1.5	1.5
Average real interest rate on domestic debt (in percent)	-2.4	0.9	-10.5	-8.3	-6.6	-5.0	-4.7	-4.6	-5.9	0.2	0.3	0.2
Real exchange rate depreciation (in percent, + indicates depreciation)	14.6	-8.7	-7.9	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	12.7	12.5	18.6	15.8	13.6	11.0	11.0	11.0	12.5	6.0	6.0	6.0
Growth of real primary spending (deflated by GDP deflator, in percent)	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.1	-0.1	0.0
Grant element of new external borrowing (in percent)	...	...	34.8	34.8	35.5	33.8	34.9	22.9	32.4	30.8	31.0	...

Sources: Country authorities; and staff estimates and projections.

1/ [Indicate coverage of public sector, e.g., general government or nonfinancial public sector. Also whether net or gross debt is used.]

2/ Gross financing need is defined as the primary deficit plus debt service plus the stock of short-term debt at the end of the last period.

3/ Revenues excluding grants.

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

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

Table 2b. Tajikistan: Sensativity Analisys for Key Indicators of Public Debt, 2011-2031

	Projections							
	2011	2012	2013	2014	2015	2016	2021	2031
PV of Debt-to-GDP Ratio								
Baseline	26	27	28	29	29	28	27	23
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	26	24	24	23	22	20	15	11
A2. primary balance is unchanged from 2011	26	28	32	35	38	40	53	85
A3. Permanently lower GDP growth 1/	26	27	29	30	30	30	34	48
A4. Alternative scenario: Contingent liability	26	37	38	39	39	38	38	36
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2012-2013	26	27	27	27	27	25	23	15
B2. primary balance is at historical average minus one standard deviations in 2012-2013	26	28	31	31	31	30	29	26
B3. Combination of B1-B2 using one half standard deviation shocks	26	26	27	26	26	24	19	6
B4. One-time 30 percent real depreciation in 2012	26	36	36	36	35	34	32	29
PV of Debt-to-Revenue Ratio 2/								
Baseline	116	121	127	131	131	126	123	106
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	116	109	107	105	102	93	69	53
A2. primary balance is unchanged from 2011	116	126	142	159	175	182	242	391
A3. Permanently lower GDP growth 1/	116	122	130	135	138	136	153	219
A4. Alternative scenario: Contingent liability	116	165	173	178	179	175	175	166
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2012-2013	116	119	123	125	123	117	104	67
B2. primary balance is at historical average minus one standard deviations in 2012-2013	116	124	137	141	142	137	134	119
B3. Combination of B1-B2 using one half standard deviation shocks	116	116	121	121	118	109	87	28
B4. One-time 30 percent real depreciation in 2012	116	163	163	163	160	154	147	132
Debt Service-to-Revenue Ratio 2/								
Baseline	3	2	2	3	3	3	3	3
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	3	2	1	0	0	0	0	0
A2. primary balance is unchanged from 2011	3	2	3	5	7	10	16	33
A3. Permanently lower GDP growth 1/	3	2	2	3	3	4	6	14
A4. Alternative scenario: Contingent liability	3	2	10	10	10	10	9	10
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2012-2013	3	2	2	2	2	2	1	-1
B2. primary balance is at historical average minus one standard deviations in 2012-2013	3	2	3	4	5	5	4	4
B3. Combination of B1-B2 using one half standard deviation shocks	3	2	2	2	2	1	0	-6
B4. One-time 30 percent real depreciation in 2012	3	3	3	4	4	4	5	6
B5. 10 percent of GDP increase in other debt-creating flows in 2012	3	2	10	10	10	10	9	10

Sources: Country authorities; and IMF 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.