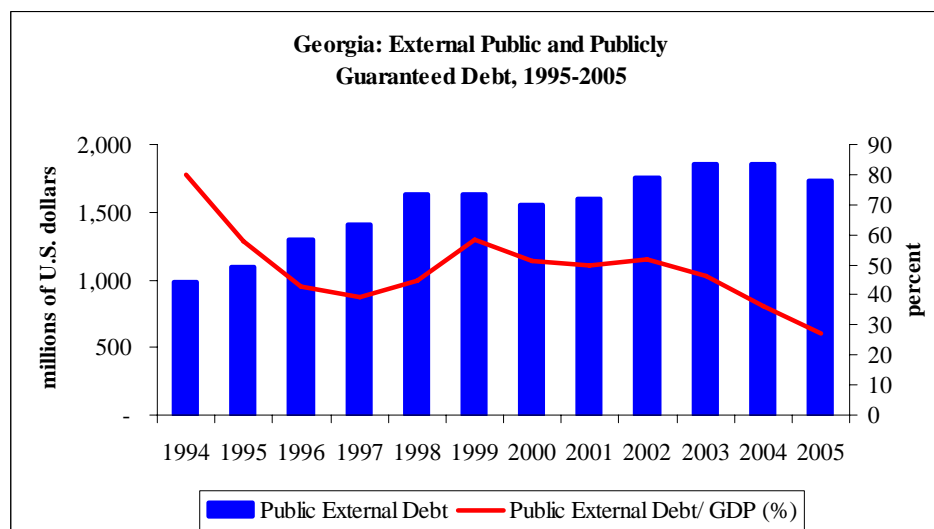


Georgia: Joint Bank-Fund Debt Sustainability Analysis¹

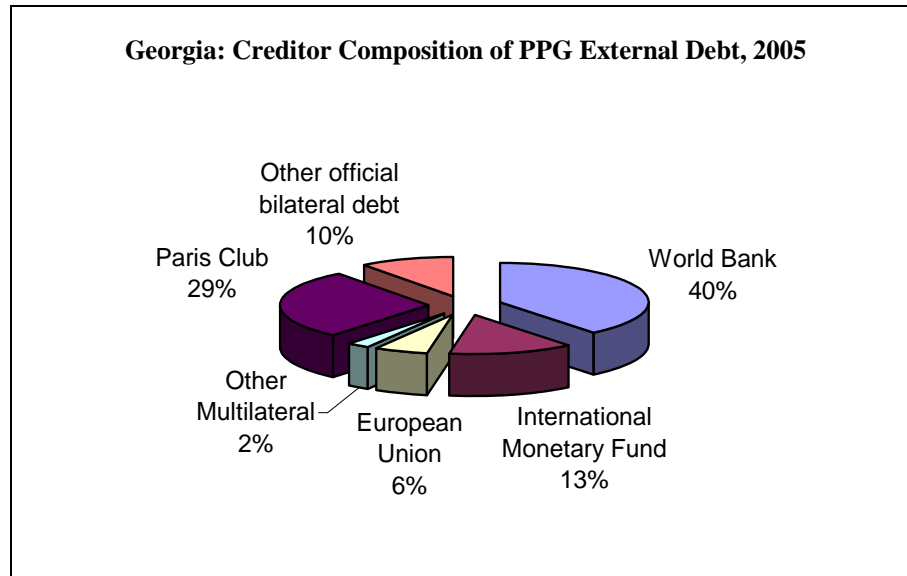
Background

1. **Over the last decade, Georgia's external public and publicly guaranteed (PPG) debt burden has fallen from more than 80 percent of GDP to less than 30 percent.** Heavy borrowing for energy imports in the initial years after independence account for the rapid build-up of external PPG debt. The stock exceeded \$1 billion by the end of 1995. Owing to robust growth, the debt-to-GDP ratio declined to below 50 percent in 1996-98, before the sharp depreciation of the lari against the U.S. dollar during the Russia crisis wiped out some of this gain. The debt-to-GDP ratio has again been declining since then. The pace increased after the Rose revolution as a result of strong growth, restrained borrowing and fast repayment of energy debt to Turkmenistan.



2. **Over the same period, the composition of Georgia's external PPG debt by creditor changed markedly.** Whereas bilateral debt comprised over 80 percent of total external debt ten years ago, this share dropped to less than 40 percent by end-2005. By contrast, the share of multilateral creditors increased from under 5 percent in 1994 to more than 60 percent. This change in creditor composition has resulted in a significant increase in the degree of concessionality. The grant element in 2005 was higher than 30 percent.

¹ Prepared jointly by IMF and World Bank staffs.



3. **The recent positive developments need to be sustained to avoid the debt legacy of the past.** External debt service payments reached about 70 percent of exports of goods and services in 1995. The very low levels of fiscal revenues excluding grants at less than 13 percent of GDP for much of the 1990s made servicing external debt particularly problematic. As a result, a series of rescheduling agreements since 1995 were concluded², but arrears continued to accumulate through 2004, including on the rescheduled debt. In contrast to the past, today external debt service payments amount to 13 percent of exports (on an accrual basis). Fiscal non-grant revenues on the order of 24 percent of GDP have eased the fiscal financing constraint on debt servicing as well.

4. **From a peak of 17 percent of GDP in 2000, the stock of domestic PPG debt steadily declined to about 10 percent at end-2005.** This amounts to about 26 percent of total general government debt at the time. Debt to the National Bank of Georgia (NBG) accounted for about 75 percent of this amount. The remaining amount of domestic general government liabilities were mostly expenditure arrears. In terms of domestic debt and bond issues, the medium term strategy of Georgia is to gradually replace the NBG debt with government securities.

5. **Public debt for the purpose of this DSA is defined narrowly on a gross basis and excludes debt owed by (formerly) state-owned enterprises, especially in the energy**

² They include eleven bilateral rescheduling agreements in 1995-98, followed by the first Paris Club flow rescheduling on Houston terms in 2001. A debt treatment under the Evian approach was granted in 2004, which includes a goodwill clause to reconsider Georgia's debt situation at the end of the current agreement. Bilateral agreements on terms comparable to the 2004 Paris Club flow rescheduling are in place with all non-Paris Club creditors except Kazakhstan.

sector. Serious data issues hamper the analysis of SOE debt. Moreover, large debt write-offs and other forms of debt settlement are expected in the near future in the context of the privatization of state-owned enterprises and rehabilitation of the energy sector. This DSA also excludes contingent liabilities from the Soviet era, including deposits at the former state savings bank. Amounts outstanding and the terms of their treatment (if any) are very uncertain. External debt excludes private sector debt for lack of data. The outstanding stock is thought to be small. However, commercial bank data suggest that these liabilities could be growing fast. The authorities are therefore encouraged to continue their efforts to collect more systematically data on private bank and non-bank indebtedness abroad.

Debt Sustainability Analysis

6. **Georgia's debt distress risk is low.**³ The baseline scenario indicates that the risk of debt distress is low, and remains so throughout the projection period. All external debt indicators are well below the relevant debt-burden thresholds. However, some debt indicators remain vulnerable to stress testing of key variables.

Indicative External Debt Burden Indicators 1/					
(in percent)					
	Georgia (strong policy performer)		Thresholds by policy performance		
	2005	2006-016 2/	Weak	Medium	Strong
<i>NPV of debt in percent of:</i>					
Exports	92	56	100	150	200
GDP	23	14	30	40	50
Revenues 3/	102	64	200	250	300
<i>Debt service in percent of:</i>					
Exports	14	4	15	20	25
Revenues 3/	12	5	25	30	35

1/ A country with a CPIA rating equal or below 3.25 is considered a weak policy performer, while a CPIA rating above 3.75 indicates strong performance. The stronger the performance, the higher the debt ratios consistent with sustainability. Refer to Figure 1b.

2/ Simple average.

3/ Excluding grants.

7. **Under the baseline scenario (Box 1), debt ratios remain on a downward trend (Table 1a and Figure 1a).** Public debt falls from about 36 percent of GDP at end-2005 to 20 percent at end-2010 and continues to decline thereafter. In net present value (NPV) terms, public debt at about 137 percent of revenues is expected to fall by 60 percent before the end

³ The CPIA for Georgia has been upgraded from medium to strong performer in June, 2006 due to the recent improvement in the policy and institutional performance.

of the decade. The debt service-to-revenue ratio is estimated to improve from 17 percent of fiscal non-grant revenues in the base year to 5 percent in 2010.

8. **Official external debt indicators also fall steadily under the baseline scenario with debt ratios continuing to shrink gradually (Table 1b and Figure 1b).** Georgia's external public debt stood at about 27 percent of GDP at end-2005, equivalent to 92 percent of exports in NPV terms. Debt service ratios are also comfortably below the relevant thresholds for a strong policy performer.

9. **Alternative scenarios and bound tests are constructed to examine the sensitivity of the baseline projection of PPG debt to a range of potential shocks (Tables 2a and 2b).** Most of these factors would not jeopardize Georgia's debt sustainability. The main exception is a temporary decline of export value growth for two years to one standard deviation below historical averages. In this case, the NPV of debt-to-exports ratio would rapidly increase in the medium term, even if the gap were financed at better than commercial terms (30 percent grant element). This outcome does not bode well in light of recent trade developments. Export volumes of scrap metal, Georgia's main export commodity, are dwindling while Russia imposed import bans on Georgian wine, mineral water, tea, and citrus fruits. With official reserves relatively low (at about 3 months of imports), this could erode hard gained exchange rate stability.

Box 1. Georgia: Macroeconomic Assumptions Underlying the DSA

A baseline macroeconomic framework similar to the ones used in previous exercises also underpins this DSA:

Real GDP growth is estimated to be 7.5 percent in 2006 before gradually falling to a projected 5 percent in 2009 and 4 percent in 2016 as Georgia progresses toward a higher income level. Long-run equilibrium growth is assumed to be sustained at 3.5 percent after 2019.

Inflation is assumed to fall from a projected 10 percent in 2006 to 5 percent by 2008. A further decline to 4 percent during 2011-15 and 3 percent thereafter is assumed, keeping pace with overall macroeconomic improvement. The **real exchange rate** relative to the dollar is assumed to appreciate at almost 3 percent per year in 2006-15, when substantial foreign capital is expected to flow into Georgia in a fast growing period. After 2015, the real exchange rate is assumed to appreciate at a much slower pace – less than one percent per year.

Export growth is projected to average more than 13 percent over 2006-10, before declining to about 6 percent for the remainder of the projection period. **Import growth** is expected to average close to 13 percent over 2006-10, before converging to 6 percent for the remainder of the projection period.

Somewhat different than earlier exercises, the average **external current account deficit** is forecast to remain above 7 percent of GDP for most of 2006-10 and would converge to 5 percent of GDP on average during the remainder of the projection period to support a faster modernization of the Georgian economy than previously assumed.

Regarding **fiscal policy**, the authorities are expected to build on the recent success of their tax and governance reforms. Tax revenues are projected to amount to about 22 percent of GDP in 2006, gradually improving to a long-run level of about 23 percent. Government spending is expected to remain stable at around 25 percent of GDP. As a result, the overall deficit would fall from less 1.8 percent of GDP in 2006–09 to less than 1.1 percent in 2010–16, followed by a balanced budget.

Small financing gaps are filled with **new public borrowing** largely on concessional terms. The bulk of the financing of the external current account deficit will be private both on the creditor and debtor side, as expected for a country in Georgia's per capita income group.

10. **A temporary widening of the annual current account deficit (by 5 percentage points of GDP each year in 2007-2009) would not lead to key debt indicators breaching indicative thresholds.** Such a scenario would only have temporary effects on the debt stock ratios through the medium term. However, debt service relative to exports would be permanently higher compared to the baseline. The assumed current account deterioration could be the result of a further deterioration of economic relations with Russia resulting in a sharp increase in the price of gas from Russia before Georgia can access alternative sources and/or a temporary disruption of remittance inflows before alternative money transfer channels are found. Restricted access to concessional credit will have permanent effects on NPV ratios (Table 2b, scenario A2). If the decline in concessionality of the new borrowing assumed in the baseline is limited to a 2-percentage point higher interest rate, however, key ratios do not breach indicative thresholds over the projection period.

11. **The main risk to fiscal debt sustainability would be a decline in GDP growth.** The NPV of debt-to-GDP ratio would rise to 30 percent in the long run in the case of permanent slow down of GDP growth. This permanent shock to real GDP growth would also push the NPV of debt-to-revenues ratio to 128 percent by 2026. Against this background, the authorities should continue to strengthen competitiveness of their tradable sector and improve the business climate to support baseline growth.

Table 1a. Georgia: Public Sector Debt Sustainability Framework, Baseline Scenario, 2003-2026
(In percent of GDP, unless otherwise indicated)

	Actual			Historical Average 5/	Standard Deviation 5/	Estimate					Projections			
	2003	2004	2005			2006	2007	2008	2009	2010	2011	2006-11 Average	2016	2026	2012-26 Average
Public sector debt 1/	58.9	48.9	36.4			30.4	25.6	23.8	21.5	20.2	18.2		12.2	4.7
o/w foreign-currency denominated	45.6	34.5	26.8			23.3	20.2	18.2	16.5	15.3	14.0		9.9	4.1
Change in public sector debt	-3.7	-10.1	-12.5			-5.9	-4.8	-1.8	-2.3	-1.3	-2.0		-0.7	-0.4
Identified debt-creating flows	-5.6	-18.1	-10.6			-11.2	-2.0	-0.9	-0.8	-1.3	-0.5		-0.1	-0.2
Primary deficit	0.4	-4.4	0.5	1.6	3.0	1.2	1.4	1.0	0.7	0.2	0.8	0.9	0.4	0.0
Revenue and grants	16.2	22.0	23.4			25.8	24.5	24.5	25.0	25.1	24.5		24.8	25.1
of which: grants	0.6	1.3	0.9			1.4	1.6	1.6	1.4	1.2	0.7		0.3	0.2
Primary (noninterest) expenditure	16.6	17.6	23.9			27.0	25.9	25.5	25.7	25.3	25.3		25.2	25.2
Automatic debt dynamics	-5.6	-11.8	-7.0			-4.0	-2.7	-1.6	-1.4	-1.4	-1.3		-0.5	-0.2
Contribution from interest rate/growth differential	-5.4	-4.1	-4.9			-3.0	-1.9	-1.1	-0.9	-0.8	-0.8		-0.4	-0.2
of which: contribution from average real interest rate	0.8	-0.8	-0.8			-0.5	-0.1	0.2	0.2	0.2	0.2		0.1	0.0
of which: contribution from real GDP growth	-6.2	-3.3	-4.2			-2.5	-1.9	-1.3	-1.1	-1.0	-1.0		-0.5	-0.2
Contribution from real exchange rate depreciation	-0.2	-7.7	-2.0			-1.0	-0.8	-0.5	-0.5	-0.6	-0.6		...	...
Other identified debt-creating flows	-0.3	-2.0	-4.1			-8.4	-0.6	-0.3	-0.1	0.0	0.0		0.0	0.0
Privatization receipts (negative)	-0.3	-0.9	-3.6			-8.0	-0.6	-0.3	-0.1	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	-1.1	-0.5			-0.4	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	2.0	8.1	-2.0			5.3	-2.8	-0.9	-1.5	-0.1	-1.4		-0.7	-0.2
NPV of public sector debt	53.0	42.6	32.2			27.1	23.5	22.1	20.5	19.3	17.5		11.7	5.1
o/w foreign-currency denominated	39.6	28.3	22.7			20.0	18.1	16.5	15.5	14.4	13.3		9.4	4.4
o/w external	39.6	28.3	22.7			20.0	18.1	16.5	15.5	14.4	13.3		9.4	4.4
NPV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...
Gross financing need 2/	9.0	9.1	10.1			9.9	8.5	7.4	6.2	5.1	5.4		3.0	1.5
NPV of public sector debt-to-revenue ratio (in percent) 3/	...	193.4	137.4			105.2	95.9	90.3	82.1	77.0	71.6		47.0	20.1
o/w external	...	128.3	96.8			77.5	73.9	67.4	62.2	57.6	54.3		37.8	17.5
Debt service-to-revenue ratio (in percent) 3/ 4/	36.6	22.5	17.3			14.3	9.5	8.0	6.0	5.4	5.3		2.3	0.9
Primary deficit that stabilizes the debt-to-GDP ratio	4.0	5.7	13.0			7.1	6.2	2.8	3.0	1.5	2.8		1.2	0.4
Key macroeconomic and fiscal assumptions														
Real GDP growth (in percent)	11.1	5.9	9.3	6.5	3.5	7.5	6.5	5.5	5.0	5.0	5.0	5.8	4.0	3.5
Average nominal interest rate on forex debt (in percent)	2.1	1.2	1.1	2.9	1.9	1.7	1.9	2.1	1.7	1.6	1.4	1.7	1.1	1.2
Average real interest rate on domestic currency debt (in percent)	6.2	-2.0	-2.0	0.0	4.1	-3.4	-0.5	4.5	5.1	6.0	5.8	2.9	6.3	6.1
Real exchange rate depreciation (in percent, + indicates depreciation)	-0.5	-18.1	-6.5	-2.3	16.0	-3.9	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	3.5	8.4	7.9	10.5	15.3	10.0	6.0	5.0	5.0	5.0	5.0	6.0	3.0	3.0
Growth of real primary spending (deflated by GDP deflator, in percent)	16.7	12.3	48.2	11.6	16.6	21.2	2.2	4.2	5.6	3.2	5.2	6.9	3.8	3.8
Grant element of new external borrowing (in percent)	...	...	...	...	...	35.3	32.8	32.9	31.0	31.8	33.4	32.9	32.4	29.7

Sources: Country authorities; and Fund 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 including 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 1b. Georgia: External Debt Sustainability Framework, Baseline Scenario, 2003-2026 1/
(In percent of GDP, unless otherwise indicated)

	Actual			Historical Average 1999-2005	Standard Deviation	Estimate					Projections				
	2003	2004	2005			2006	2007	2008	2009	2010	2011	2006-11 Average	2016	2026	2012-26 Average
External debt (nominal) 1/	46.3	36.2	27.1	...	...	23.0	20.2	18.2	16.5	15.4	14.1	...	9.9	4.1	...
o/w public and publicly guaranteed (PPG)	46.3	36.2	27.1	...	...	23.0	20.2	18.2	16.5	15.4	14.1	...	9.9	4.1	...
Change in external debt	-5.3	-10.1	-9.1	...	...	-4.1	-2.8	-2.0	-1.7	-1.2	-1.3	...	-0.5	-0.3	...
Identified net debt-creating flows	-8.8	-10.1	-10.0	...	...	-5.5	3.1	3.1	3.1	2.9	3.1	...	4.0	4.2	...
Non-interest current account deficit	6.3	7.7	4.8	5.7	1.3	9.4	11.0	8.5	7.3	6.2	5.6	8.0	5.2	5.3	5.2
Deficit in balance of goods and services	15.0	14.0	14.6	...	...	18.8	20.0	17.5	16.1	14.7	13.7	...	11.6	10.3	...
Exports	18.3	24.8	24.8	...	...	25.5	26.0	26.2	26.3	26.0	25.3	...	21.6	20.0	...
Imports	33.3	38.8	39.4	...	...	44.4	46.0	43.7	42.4	40.7	39.1	...	33.2	30.3	...
Net current transfers (negative = inflow)	-6.6	-6.7	-8.0	-6.8	0.9	-8.8	-7.8	-7.9	-7.5	-7.1	-6.7	...	-5.1	-3.8	-4.7
Other current account flows (negative = net inflow)	-2.1	0.4	-1.8	...	...	-0.7	-1.2	-1.1	-1.3	-1.4	-1.4	...	-1.4	-1.3	...
Net FDI (negative = inflow)	-8.4	-8.2	-8.3	-6.2	2.8	-13.6	-7.1	-4.7	-3.6	-2.8	-2.0	-5.6	-1.0	-0.9	-1.0
Endogenous debt dynamics 2/	-6.7	-9.5	-6.6	...	...	-1.3	-0.8	-0.7	-0.6	-0.5	-0.5	...	-0.3	-0.1	...
Contribution from nominal interest rate	1.0	0.7	0.6	...	...	0.5	0.4	0.3	0.3	0.2	0.2	...	0.1	0.0	...
Contribution from real GDP growth	-4.9	-2.1	-2.7	...	...	-1.7	-1.2	-1.0	-0.8	-0.7	-0.7	...	-0.4	-0.1	...
Contribution from price and exchange rate changes	-2.9	-8.1	-4.5	...	...	...	...	...	...	...	...	...	...	...	...
Residual (3-4) 3/	3.5	0.0	0.9	...	...	1.3	-5.9	-5.1	-4.7	-4.1	-4.4	...	-4.4	-4.6	...
o/w exceptional financing	-1.4	2.2	0.3	...	...	7.6	0.6	0.4	0.8	0.7	1.1	...	0.8	0.3	...
NPV of external debt 4/	...	...	22.9	...	...	19.8	18.1	16.5	15.6	14.5	13.4	...	9.4	4.4	...
In percent of exports	...	...	92.3	...	...	77.5	69.7	63.1	59.2	55.9	52.8	...	43.4	22.0	...
NPV of PPG external debt	...	...	22.9	...	...	19.8	18.1	16.5	15.5	14.5	13.4	...	9.4	4.4	...
In percent of exports	...	...	92.2	...	...	77.5	69.7	63.1	59.1	55.9	52.8	...	43.4	22.0	...
Debt service-to-exports ratio (in percent)	26.6	18.0	14.2	...	...	12.9	7.7	5.7	3.8	3.3	3.3	...	1.7	1.2	...
PPG debt service-to-exports ratio (in percent)	26.6	17.8	14.1	...	...	12.9	7.7	5.7	3.7	3.3	3.2	...	1.7	1.2	...
Total gross financing need (billions of U.S. dollars)	0.1	0.2	0.1	...	...	-0.1	0.5	0.5	0.5	0.5	0.6	...	1.0	1.7	...
Non-interest current account deficit that stabilizes debt ratio	11.7	17.7	13.9	...	...	13.5	13.8	10.5	8.9	7.4	6.9	...	5.6	5.6	...
Key macroeconomic assumptions															
Real GDP growth (in percent)	11.1	5.9	9.3	6.1	3.4	7.5	6.0	5.5	5.0	5.0	5.0	5.7	4.0	3.5	4.2
GDP deflator in US dollar terms (change in percent)	5.9	21.3	14.1	3.2	12.7	9.0	5.3	5.0	5.0	5.6	6.2	6.0	3.3	3.0	3.6
Effective interest rate (percent) 5/	2.3	2.0	2.0	3.3	2.2	2.0	2.1	1.7	1.7	1.5	1.4	1.7	1.3	0.0	1.0
Growth of exports of G&S (US dollar terms, in percent)	32.1	74.1	24.9	37.0	25.5	20.3	13.8	11.6	10.6	9.6	8.6	12.4	6.0	6.0	6.1
Growth of imports of G&S (US dollar terms, in percent)	33.9	49.9	26.6	28.5	19.3	31.8	15.9	5.2	6.9	6.5	7.0	12.2	5.5	6.0	5.9
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	35.3	32.8	32.9	31.0	31.8	33.4	32.9	32.4	29.7	34.3
<i>Memorandum item:</i>															
Nominal GDP (billions of US dollars)	4.0	5.1	6.4	...	...	7.5	8.4	9.3	10.2	11.3	12.6	...	20.0	38.6	...

Source: Staff simulations.

1/ Includes public sector external debt.

2/ 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.

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 NPV of private sector debt is equivalent to its face value.

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

Table 2a.Georgia: Sensitivity Analysis for Key Indicators of Public Debt 2006-2026

	Estimate		Projections					
	2006	2007	2008	2009	2010	2011	2016	2026
NPV of Debt-to-GDP Ratio								
Baseline	27	24	22	21	19	18	12	5
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	27	24	23	22	21	20	16	16
A2. Primary balance is unchanged from 2005	27	23	21	20	19	17	10	8
A3. Permanently lower GDP growth 1/	27	24	23	22	21	20	19	32
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2007-2008	27	25	25	24	24	23	20	20
B2. Primary balance is at historical average minus one standard deviations in 2007-2008	27	26	27	25	24	22	15	7
B3. Combination of B1-B2 using one half standard deviation shocks	27	25	26	24	22	20	14	6
B4. One-time 30 percent real depreciation in 2007	27	32	30	28	26	24	16	8
B5. 10 percent of GDP increase in other debt-creating flows in 2007	27	31	29	27	25	23	16	8
NPV of Debt-to-Revenue Ratio 2/								
Baseline	105	96	90	82	78	72	47	20
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	106	97	93	88	86	80	63	63
A2. Primary balance is unchanged from 2005	104	92	86	79	75	68	42	33
A3. Permanently lower GDP growth 1/	106	97	93	87	85	82	78	128
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2007-2008	106	102	102	97	96	92	81	80
B2. Primary balance is at historical average minus one standard deviations in 2007-2008	106	106	112	102	96	89	60	28
B3. Combination of B1-B2 using one half standard deviation shocks	106	103	105	95	90	83	55	25
B4. One-time 30 percent real depreciation in 2007	106	129	121	111	104	96	63	30
B5. 10 percent of GDP increase in other debt-creating flows in 2007	106	126	118	108	102	94	64	31
Debt Service-to-Revenue Ratio 2/								
Baseline	14	10	8	6	5	5	2	1
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	14	9	8	6	5	5	3	3
A2. Primary balance is unchanged from 2005	14	9	8	6	5	5	2	1
A3. Permanently lower GDP growth 1/	14	10	8	6	6	6	3	6
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2007-2008	14	10	8	7	6	6	4	4
B2. Primary balance is at historical average minus one standard deviations in 2007-2008	14	9	8	7	6	6	3	2
B3. Combination of B1-B2 using one half standard deviation shocks	14	10	8	7	6	6	3	1
B4. One-time 30 percent real depreciation in 2007	14	10	9	6	6	6	2	1
B5. 10 percent of GDP increase in other debt-creating flows in 2007	14	9	9	7	6	6	4	2

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

1/ Assumes that real GDP growth is at baseline minus one standard deviation divided by the square root of 20 (i.e., the length of the projection period).

2/ Revenues are defined inclusive of grants.

Table 2b. Georgia: Sensitivity Analyses for Key Indicators of Public and Publicly Guaranteed External Debt, 2006-26
(In percent)

	Estimate		Projections					
	2006	2007	2008	2009	2010	2011	2016	2026
NPV of debt-to-GDP ratio								
Baseline	20	18	17	16	15	13	9	4
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2006-26 1/	20	19	18	17	17	16	11	4
A2. New public sector loans on less favorable terms in 2006-26 2/	20	19	18	17	16	15	12	7
A3. Current account deficit 5 percentage points higher than in the baseline in 2007-09 3/	20	24	23	22	17	16	11	4
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2007-08	20	19	18	17	15	14	10	5
B2. Export value growth at historical average minus one standard deviation in 2007-08 4/	20	21	25	24	22	21	14	6
B3. US dollar GDP deflator at historical average minus one standard deviation in 2007-08	20	21	22	21	20	18	13	6
B4. Net non-debt creating flows at historical average minus one standard deviation in 2007-08 5/	20	23	23	22	21	19	13	6
B5. Combination of B1-B4 using one-half standard deviation shocks	20	22	26	25	23	21	15	6
B6. One-time 30 percent nominal depreciation relative to the baseline in 2007 6/	20	25	23	22	20	19	13	6
NPV of debt-to-exports ratio								
Baseline	78	70	63	59	56	53	43	22
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2006-26 1/	78	74	69	66	64	61	50	21
A2. New public sector loans on less favorable terms in 2006-26 2/	78	72	68	65	63	60	56	38
A3. Current account deficit 5 percentage points higher than in the baseline in 2007-09 3/	78	94	88	85	65	62	50	21
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2007-08	78	70	63	59	56	53	43	22
B2. Export value growth at historical average minus one standard deviation in 2007-08 4/	78	100	141	133	125	119	97	44
B3. US dollar GDP deflator at historical average minus one standard deviation in 2007-08	78	70	63	59	56	53	43	22
B4. Net non-debt creating flows at historical average minus one standard deviation in 2007-08 5/	78	87	90	84	80	75	61	28
B5. Combination of B1-B4 using one-half standard deviation shocks	78	82	88	83	79	74	61	29
B6. One-time 30 percent nominal depreciation relative to the baseline in 2007 6/	78	70	63	59	56	53	43	22
Debt service-to-exports ratio								
Baseline	13	8	6	4	3	3	2	1
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2006-26 1/	9	7	7	5	4	5	4	3
A2. New public sector loans on less favorable terms in 2006-26 2/	9	7	6	5	4	4	4	3
A3. Current account deficit 5 percentage points higher than in the baseline in 2007-09 3/	9	7	7	5	5	6	7	4
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2007-08	9	7	6	4	4	4	3	2
B2. Export value growth at historical average minus one standard deviation in 2007-08 4/	9	9	10	8	7	7	8	5
B3. US dollar GDP deflator at historical average minus one standard deviation in 2007-08	9	7	6	4	4	4	3	2
B4. Net non-debt creating flows at historical average minus one standard deviation in 2007-08 5/	9	7	7	5	5	5	5	3
B5. Combination of B1-B4 using one-half standard deviation shocks	9	8	7	5	5	5	5	3
B6. One-time 30 percent nominal depreciation relative to the baseline in 2007 6/	9	7	6	4	4	4	3	2

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. FDI is assumed to be four percentage points of GDP below the historical average, which is distorted as a result of pipeline construction and large-scale privatization.

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.

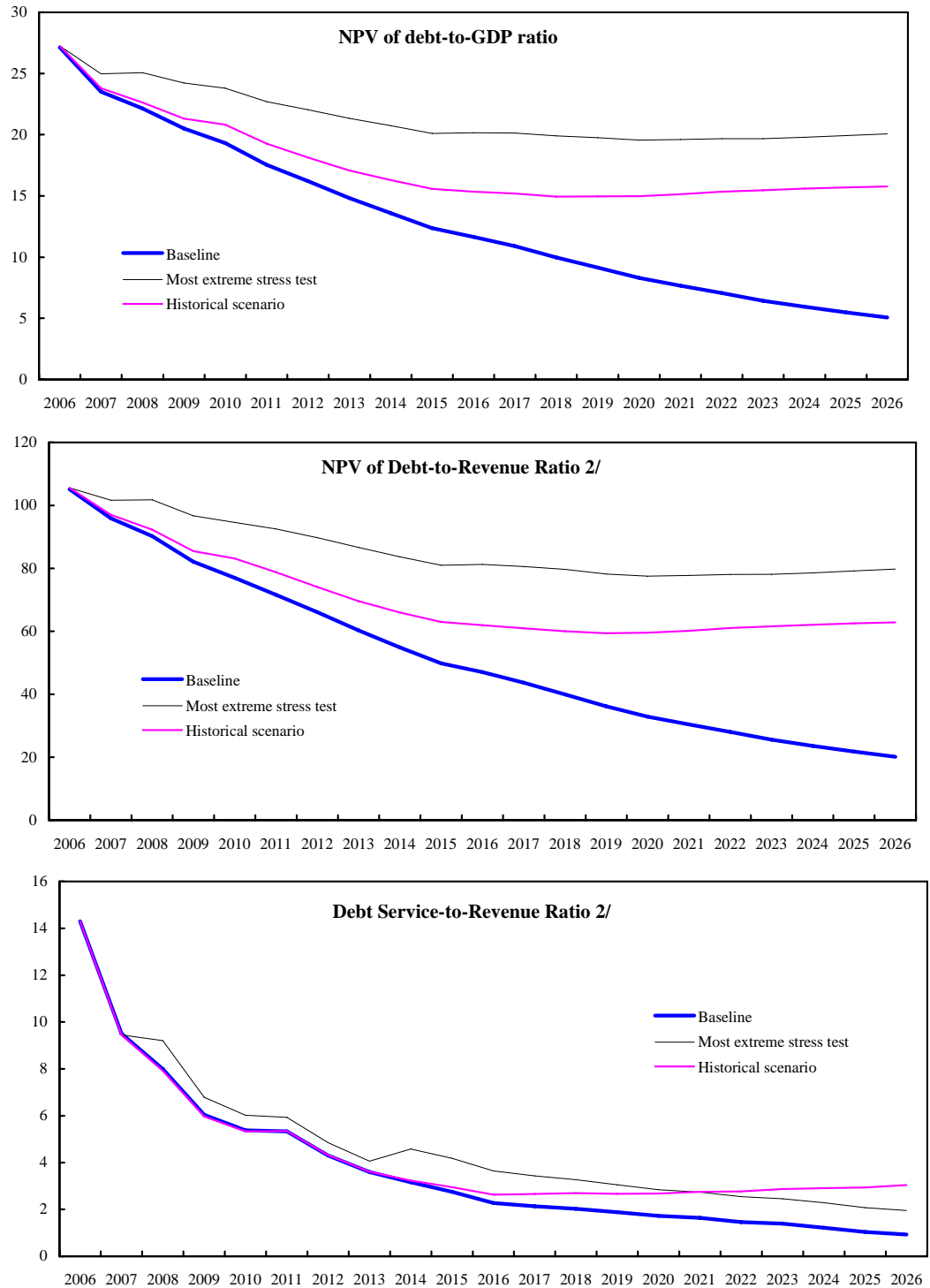
3/ All other key variables are at the same values as in scenario A1.

4/ 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).

5/ Includes official and private transfers and FDI.

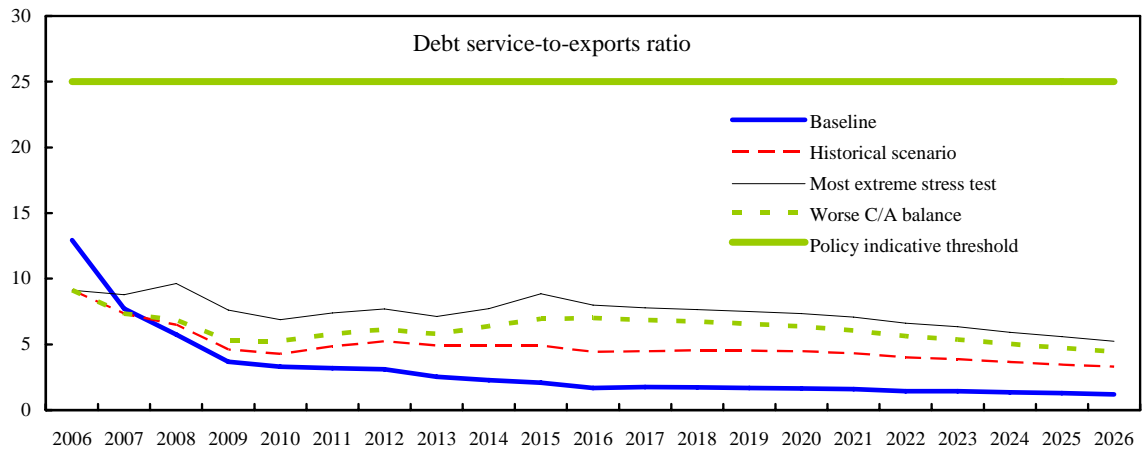
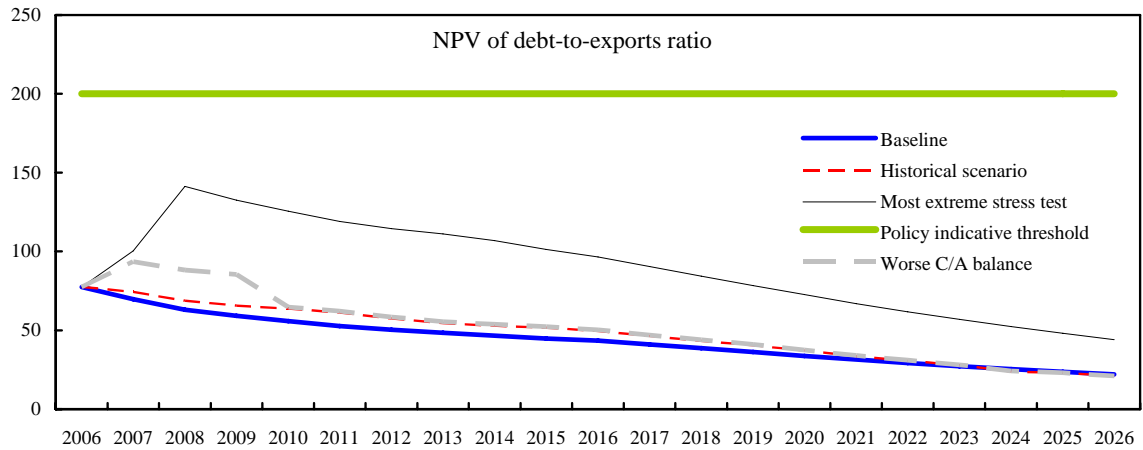
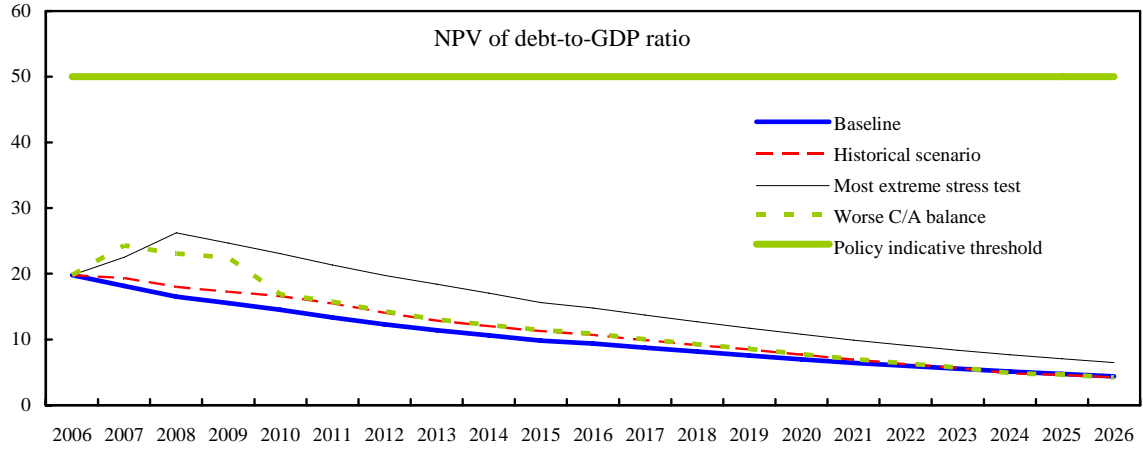
6/ Depreciation is defined as percentage decline in dollar/local currency rate, such that it never exceeds 100 percent.

Figure 1a.Georgia: Indicators of Public Debt Under Alternative Scenarios, 2006-2026 1/



Source: Staff projections and simulations.
 1/ Most extreme stress test is test that yields highest ratio in 2016.
 2/ Revenue including grants.

Figure 1b. Georgia: Indicators of Public and Publicly Guaranteed External Debt Under Alternative Scenarios, 2006-2026
(In percent)



Source: Staff projections and simulations.