INTERNATIONAL MONETARY FUND AND
INTERNATIONAL DEVELOPMENT ASSOCIATION

REPUBLIC OF MODOVA

Joint IMF/World Bank Debt Sustainability Analysis Under the Debt Sustainability Framework for Low-Income Countries[1]

Approved by Juha Kähkönen and Christian Mumssen (IMF)
and Jeffrey D. Lewis and Yvonne M. Tsikata (IDA)

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Moldova's risk of debt distress remains low, as all public external debt and debt service indicators are expected to remain below the relevant indicative thresholds over the long term, notwithstanding the projected relatively large borrowing in the next few years.[2] Total public debt is manageable as well. Nevertheless, continued prudent debt management as well as cautious assessment and monitoring of project financing will be required to mitigate the risks to public and publicly guaranteed debt sustainability arising, among other factors, from large private sector debt and potential contingent liabilities related to gas payment arrears of the breakaway region of Transnistria.

I. Background

1. **The results of this debt sustainability analysis (DSA) are similar to those of the previous DSA issued in early 2010.**[3] The 2010 DSA concluded that the risk of public debt distress was low, but sizeable private external debt, arrears on energy payments, and history of debt distress warrant caution in public borrowing.

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[1] This DSA was prepared jointly by the IMF and World Bank. The debt data underlying this exercise were provided by the Moldova authorities.

[2] The low-income country debt sustainability framework (LIC-DSF) recognizes that better policies and institutions allow countries to manage higher levels of debt, and thus the threshold levels for debt indicators are policy-dependent. In the LIC-DSF, the quality of a country's policies and institutions is measured by the World Bank's Country Policy and Institutional Assessment (CPIA) index and classified into three categories: strong, medium, and weak. Moldova's policies and institutions, as measured by the CPIA, averaged 3.75 over the past three years, placing it in the "medium performer" category, defined as countries with a three year average CPIA below or at 3.75 but above 3.25. The relevant indicative thresholds for this category are: 40 percent for the present value (PV) of 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 for the debt service-to-exports ratio, and 30 percent for the debt service-to-revenue ratio. These thresholds are applicable to public and publicly guaranteed external debt. As remittances represent large and relatively stable inflows to Moldova, modified debt burden indicators—adding remittances to GDP and exports—are used with thresholds lower than the applicable DSF thresholds by 1/10.

[3] IMF Country Report No. 10/32.

2. **Indicators of debt burden have improved as a result of a downward revision in near-term borrowing projections relative to the 2010 DSA and an update of the macroeconomic framework.** As in the previous DSA, the macroeconomic framework is based on the program supported by a blend of Extended Credit Facility and Extended Fund Facility Arrangements (ECF/EFF). The uptake from commitments pledged at the Brussels Consultative Group meeting of development partners in March 2010 has been lower than expected, in part due to issues with implementation of partners' conditionality and procedural requirements. In line with recent developments, the baseline assumptions for economic growth, budget revenue, fiscal balance, and net exports are more optimistic, and the projected rate of external debt accumulation is somewhat lower compared to the previous DSA, which affects positively long-term debt dynamics. However, the lower discount rate—4 percent, down from 5 percent in the 2010 DSA as a result of lower global interest rates—raises the PV of external debt across the board.

3. **Moldova's external public and publicly guaranteed (PPG) debt stock remains low despite the increase in the last two years.** The PV of debt at end-2010 was 16 percent of the sum of GDP and remittances or 32 percent of the sum of exports and remittances. Pick-up in borrowing partly due to initiation of the ECF/EFF arrangements contributed to a rise in the ratio of external PPG debt to GDP over the past few years. The stock of external PPG debt rose slightly to 22 percent of GDP (US$1.3 billion) at end-2010 from 20 percent of GDP (US$1.0 billion) in 2007.[4] External debt service remains low thanks to high concessionality of external borrowing as well as grace periods and low interest rates following the 2006 Paris Club deal. Private external debt—which totaled 45 percent of GDP at end-2010—has increased sharply over the last few years, driven mainly by an increase in trade-related and

Moldova: External Public Debt Indicators at End-2010

	Indicative Thresholds	End-2010
Present value of debt, as a percent of:		
GDP and remittances	36	16
Exports and remittances	135	32
Revenue	250	55
Debt service, as a percent of:		
Exports and remittances	18	2
Revenue	30	4

Source: IMF staff estimates.

Moldova: Stock of Public and Publicly-Guaranteed External Debt at End-2010

	In billions of U.S. Dollars	As a Share of Total External Debt	In percent of GDP
Total	1,302	100	22
Multilateral	1,059	81	18
Bilateral	232	18	4
Commercial	11	1	0

Sources: Moldovan authorities, and IMF staff estimates.

[4] Following the DSA guidelines, the non-guaranteed SOE's debt is not included into the PPG debt, as the Fund-supported program's technical memorandum of understanding excludes such debt from the external debt limit. The authorities have not provided guarantees for SOE's borrowing over the last few years (the Law on Public Debt, Government Guarantees, and On-lending (No. 419, 2006) includes a significant charge for such guarantees). The SOEs' non-guaranteed external debt totaled MDL 330 million (about 0.5 percent of GDP) at end-2010.

other short-term debt related to energy imports. At end-2010, about 59 percent of private external debt was contracted on a short-term basis. Private external debt significantly exceeds the levels observed in other developing countries, representing a macroeconomic vulnerability and a potential risk for debt sustainability.

4. **Around 81 percent of external PPG debt is held by multilateral creditors**, mainly the IMF (US$507 million, 39 percent) and the International Development Association (IDA, 30 percent). About 18 percent is held by bilateral creditors—mainly Russia and the USA. Commercial borrowing comprises the remaining 1 percent of PPG external debt.

5. **Domestic public debt has remained rather low.** At end-2010, the stock of recorded domestic public debt amounted to 7.4 percent of GDP, similar to 7.0 percent of GDP at end-2007, as the market for domestic government securities is still shallow. However, domestic public debt interest payments are comparable to the ones on external debt due to higher interest rates. Total PPG domestic and external debt stood at 29.8 percent of GDP at end-2010.

II. Underlying Debt Sustainability Analysis Assumptions

6. **Box 1 summarizes the medium-term macroeconomic framework underlying the DSA.** The baseline macroeconomic projections take into account the expected sizeable fiscal and external adjustment under the program supported by IMF arrangements. Most notably, the baseline scenario—which is based on current policies—projects annual average growth of 4.8 percent in 2011–16, slightly above the crisis-affected average for the last five years. Growth is expected to be supported by pick-up in investment and a rise in net exports. Recent government initiatives to facilitate exports, progress in free trade negotiations with the European Union, and improving economic conditions in other trade partners suggest a positive external outlook.

Box 1: Baseline Macroeconomic Assumptions (2011–31)

The baseline macroeconomic framework assumes that further development of Moldova's potential in export-oriented sectors and a strengthening of macroeconomic policies will underpin the economy.

- **Real GDP growth** is projected to average 4.8 percent in 2011–16 supported by strong performance in remittances, exports, and investments. Over the longer term, envisaged structural reforms would create an enabling environment, broadening the sources of growth. Correspondingly, the estimate of the long-term potential GDP growth has been revised up to 5 percent from 4 percent.
- **Inflation** is projected to stay close to 8 percent in 2011 due to pick-up in global energy prices despite ongoing leu appreciation, and gradually decline to below 6 percent by end-2012. From 2013 on, inflation is expected to moderate to 5 percent, assuming sound public sector policies, absence of further exogenous price shocks, and strong commitment of the National Bank to preserving price stability.
- The **current account deficit** is expected to widen to above 11 percent in the near term, as worsening in trade balance is only partially offset by a rebound in remittances. Over the medium and long term, the current account deficit is projected to stabilize at about 8 percent. Exports are projected to accelerate in the medium term, as authorities' efforts in developing export-oriented sectors come to fruition and Moldova makes full use of its autonomous trade preferences and the forthcoming free trade agreement with the EU. Exports of goods and services are expected to reach almost 49 percent of GDP over the medium term. Imports are projected to be buoyant, reflecting the strong domestic demand and the high import content of exports, and eventually to stabilize at 84 percent of GDP. Remittance inflows—which are among the largest in the world relative to GDP—are projected to rise somewhat in the near term and then gradually decline well below current levels by 2031.The developments in remittances are expected to reflect an increase in domestic employment opportunities and severance of ties between long-term immigrants and the home country.
- **External financing** is assumed to shift from concessional to market financing over the long term reflecting economic developments and Moldova's graduation from low-income status. Given development needs and absorption capacity, public external borrowing is assumed to be about 2 percent of GDP over the long term, compared with 1.6 percent in 2010.
  - ***Multilateral creditors:*** Projected loan disbursements in the near to medium term are relatively high due to the recent commitments made at the March 2010 Consultative Group meeting in Brussels, in particular for infrastructure development. From mid-2011, terms on new IDA loans were changed to 1.25 percent interest change, 5-year grace period and a 25-year maturity.
  - ***Bilateral creditors:*** Over the medium and long term, borrowing from bilateral sources is projected to decline due to the likely opening of market access.
  - ***Commercial creditors:*** Over the long term, commercial borrowing is projected to increase. Economic development and financial integration are likely to widen the range of financing sources, including market access. The terms are assumed to be in line with the recent borrowings of sub-investment grade sovereigns.
- **Fiscal policy** is projected to stay on a consolidation path in the medium term. The deficit is projected to narrow to about 0.5 percent of GDP in 2016 from 2.5 percent in 2010 and then to stabilize at this level over the long term. The consolidation is expected to be supported by ongoing tax policy and tax administration reforms and rationalization of primary non-interest expenditures.
- **Domestic debt** is expected to increase over the long term driven by deepening of the domestic banking sector and development of local capital market. Real interest rates on domestic debt are projected to average about 4.5 percent compared to the crisis-influenced average of 5.8 percent in 2008–10. The public debt held by the National Bank of Moldova is projected to be gradually repaid over the medium term.

III. Debt Sustainability

A. External Debt Sustainability Analysis

7. **Under the baseline scenario, all external debt and debt service indicators remain well below the relevant indicative debt burden thresholds over the projection period** (Figure 1 and Table 1). All three external debt stock indicators are projected to be on a declining trend from 2011 onward, reflecting prudent fiscal policy and strong economic growth. Debt service ratios (both as a share of exports and government revenue) rise somewhat from low levels, but remain well below indicative thresholds throughout the 20-year projection period despite falling concessionality.

8. **External debt sustainability is most vulnerable to an export growth shock** (Table 3).[5] Table 3 and Figure 1 illustrate how a temporary decline in export growth (by one standard deviation in 2012–13) would push the debt service-to-exports-and-remittances and debt service-to-revenue ratios up in the medium term. The ratios would converge to the baseline in the long term.[6]

9. **Debt dynamics are worse under an alternative scenario in which key variables are at their historical averages in the longer term** (Figure 1). The debt burden indicators under the historical scenario evolve non-monotonically: they are below the baseline indicators in the near term, but exceed them in the long term. This profile arises from the difference between the baseline paths of the current account balance and FDI flows and their historical averages. In the near term, the FDI flows are projected to be below the historical averages, but exceed them in the medium and long term due to the expected influx of FDI brought by the improving business climate and privatization prospects. In the past, Moldova experienced severe economic contractions, which lowered FDI's historical average.

B. Total Public Debt Sustainability

10. **Under the baseline scenario, the PV of total PPG debt in percent of GDP and in percent of revenue are both projected to decline over the medium term** (Figure 2 and Table 2). Total PPG debt largely consists of the external PPG debt in the medium term hence it closely follows the dynamics of its external component. However, over the long term the structure of PPG debt is projected to shift toward a larger share of domestic debt. The decline in the grant element of new external borrowing would make domestic borrowing relatively more attractive, also taking into the account the exchange rate risks associated with external

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[5] The most extreme stress test is defined as the bound test resulting in the most extreme deterioration of the debt burden indicator after 10 years. The sensitivity analysis of both external PPG and total PPG debt is based on bound tests, which test debt indicators' sensitivity to temporary shocks to key macro variables, and on alternative scenarios, which presents an alternative evolution of the debt ratio in response to long-term shocks.

[6] Figure 1b presents the same analysis using only GDP as a denominator, rather than GDP plus remittances.

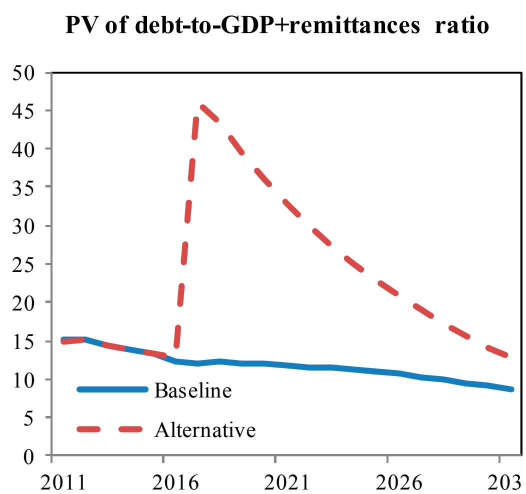
borrowing and a likely increase in foreign interest rates. The authorities' effort to develop domestic capital markets are also expected to increase the range of investors and lower the cost of domestic debt. The shift towards non-concessional external borrowing and domestic debt leads to a slight pick-up in debt service ratios in the long term.

11. **Public debt ratios are particularly sensitive to a decline in GDP growth** (Table 4). A moderation in real GDP growth in 2012-13 (to the historical average minus one standard deviation) would raise the PV of public debt-to-GDP ratio and the PV of public debt-to-revenue ratio to 67 percent and 201 percent, respectively, by the end of projection period from 25 percent and 68 percent in 2011. The impact on the debt service-to-revenue ratio is also a concern, leading to an increase to around 26 percent in 2031.

12. **Under alternative scenarios, debt dynamics worsen significantly, especially over the long term.** One alternative scenario keeps the primary balance unchanged from its 2011 level (the red dashed line in Figure 2). Given that the 2011 primary deficit of 1.1 percent of GDP is significantly larger than the one targeted in 2012 and over the projection period, it is not surprising that the scenario results in deteriorating debt dynamics. The scenario with permanently lower GDP growth (the thin black line in Figure 2) generates even steeper upward path in debt burden indicators. These scenarios underscore the need to conduct prudent fiscal policy and safeguard macroeconomic stability. The scenario with key macroeconomic variables at their respective historical averages has slightly more benign debt dynamics than the baseline, mostly due to the fact that historical average of primary surplus is better than the baseline assumption thanks to large surpluses in the early 2000s.

IV. SCENARIO INCLUDING TRANSNISTRIA'S GAS DEBT

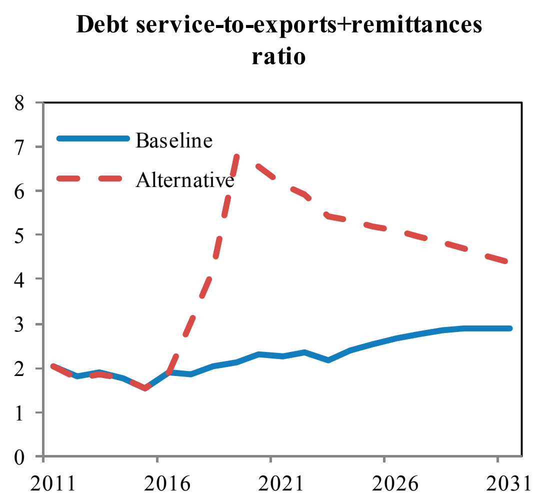
13. **This section explores a highly hypothetical alternative scenario—undertaken at the request of IMF Executive Directors—in which the government has to assume the debt of the gas-importing company Moldovagaz, stemming mainly from exposure to the breakaway region of Transnistria**. Owing to chronic underpayment by Transnistria's energy distribution company for the gas imported from Russia, Moldovagaz had about US$2.5 billion of debt related to Transnistria on its balance sheet at end-2010.[7] If the debt is called, Moldovagaz would not be able to repay it itself. A number of potential debt resolution scenarios are possible. The possibility examined here—without any

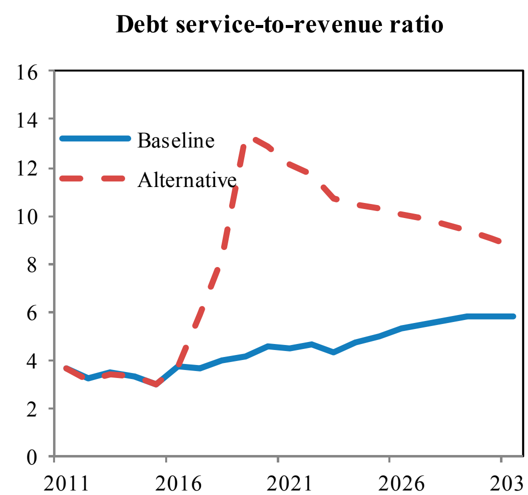


[7] Moldovagaz is a joint-stock company, in which the Russian gas supplier Gazprom holds 50 percent of shares, Moldova's government controls 35.3 percent, and Transnistrian local authorities hold 13.4 percent of shares, which is currently managed by Gazprom as well.

prejudice regarding its likelihood—is that the government would need to step in. As accumulation of arrears to the tune of US$500 million a year continues in Transnistria, the debt stock is conservatively assumed to rise further to US$5 billion and be repaid at the relatively high interest rate of 4 percent over a relatively short (for debt of that size) 20-year period with one year grace. The fiscal and balance of payments assumptions are adjusted accordingly. The external PPG debt would consequently surge to about 60 percent of GDP in the year the gas debt is assumed.

14. **If it materializes, this scenario would lead to a significant deterioration in the debt dynamics, but is not expected to cause a debt crisis.** Under the scenario, PV of debt relative to the sum of GDP and remittances ratio would briefly breach the relevant threshold (Figure 3 and Tables 5 and 6). It would also lead to a substantial worsening of debt service indicators over long term, suggesting a large public sector burden. Still, the risk of debt distress would increase only to "moderate" rather than to "high".[8]





V. The Authorities' View

15. **The authorities concurred with the overall assessment under the baseline, presented to them in May 2011.** They acknowledged the need for fiscal consolidation and strengthening of debt management. With the help of developing partners, the authorities are currently making efforts to develop the domestic government securities market to broaden the range of sources of potential financing. They agreed on the need to borrow on concessional terms and refrain from commercial borrowing in the medium term until debt management and project implementation capacity increase.

[8] In principle, this scenario could also lead to some gains for the state of Moldova, possibly in the form of increased share of Moldovagaz' capital. As such gains would not materially affect GDP, exports, or budget revenue, they are not included in the empirical analysis.

16. **Both Moldovagaz and the Moldova authorities stated that they do not recognize any debt related to Transnistria's underpayment for imported gas.** They pointed out that Moldovagaz has no control over collections in Transnistria and thus cannot be held liable for underpayment there. Moreover, a plan for separation of Moldovagaz' assets and liabilities between Transnistria and the rest of Moldova—under which each side will pay to Gazprom separately for the gas it buys—exists since 2007, but practical progress has been slow. Staff agreed, while pointing out that an analysis of the implications of Transnistria's gas debt, which technically remains on Moldovagaz' balance sheet, has been a longstanding request of a number of IMF Executive Directors.

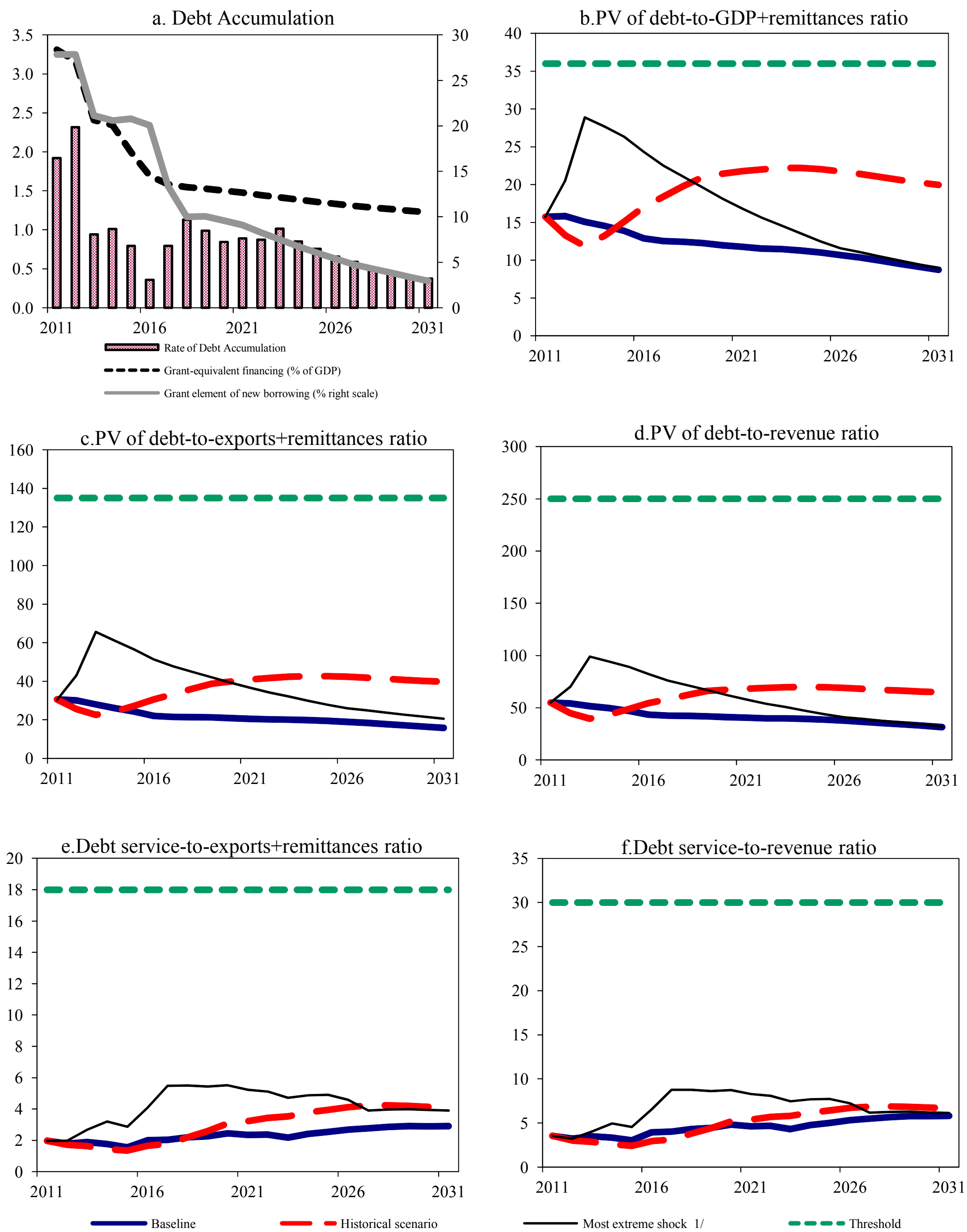
VI. Conclusion

17. **Moldova is assessed to be at a low risk of debt distress based on external debt burden indicators.** Under the baseline scenario, all indicators of PPG external debt stay in safe territory. Stress tests suggest that the current relatively benign outlook is somewhat dependent on the macroeconomic improvement, as keeping key macroeconomic variables at their historical averages level over the projection period results in worse debt dynamics. This highlights the benefits of safeguarding macroeconomic stability and continuing with growth-enhancing structural reforms. In addition, debt service indicators are sensitive to shocks to export growth, partly as exports are an important growth driver in Moldova. The public DSA suggests that Moldova's overall public sector debt dynamics are sustainable provided fiscal adjustment continues as planned and is sustained after the end of the current Fund-supported program.

18. **Sustained improvement in governance and quality of institutions would help to substantially reduce debt vulnerabilities.** Moldova is currently on the borderline between medium and strong policy performer. Progress with institutional reforms would help to move to strong performer status and thus allow more borrowing without raising debt vulnerability.

19. **The alternative scenario including gas payment arrears related to Transnistria illustrates one particular, if hypothetical, risk to the debt outlook.** If it nevertheless materializes, this scenario would significantly stress Moldova's debt servicing capacity and macroeconomic stability. At the same time, it appears unlikely to cause severe debt distress even under the employed conservative assumptions, as Moldova's risk of debt distress rises from "low" to "moderate" rather than to "high".

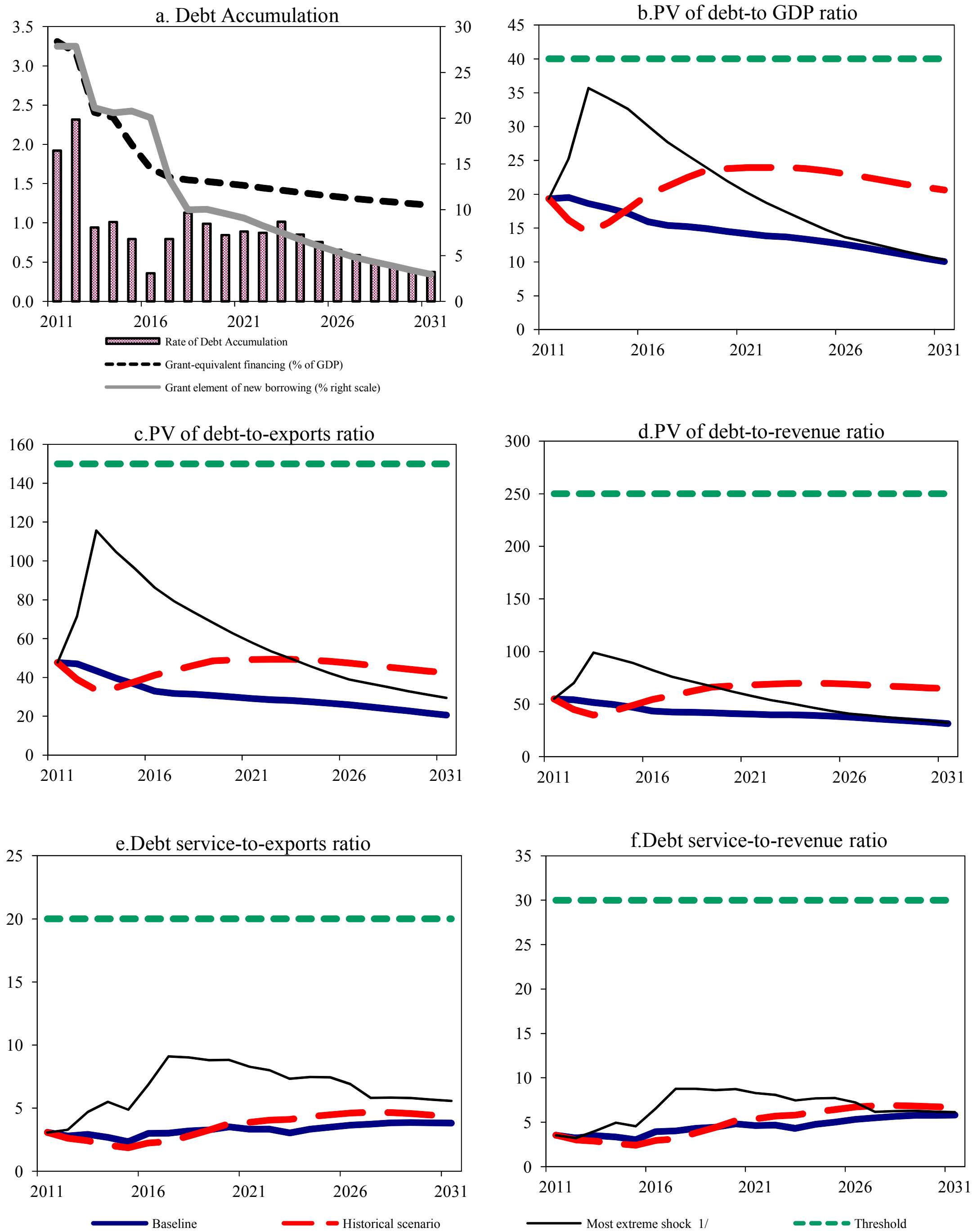
Figure 1:Moldova: Indicators of Public and Publicly Guaranteed External Debt under Alternatives Scenarios, 2011-2031 1/



Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in 2021. In figure b. it corresponds to a Exports shock; in c. to a Exports shock; in d. to a Exports shock; in e. to a Exports shock and in figure f. to a Exports shock

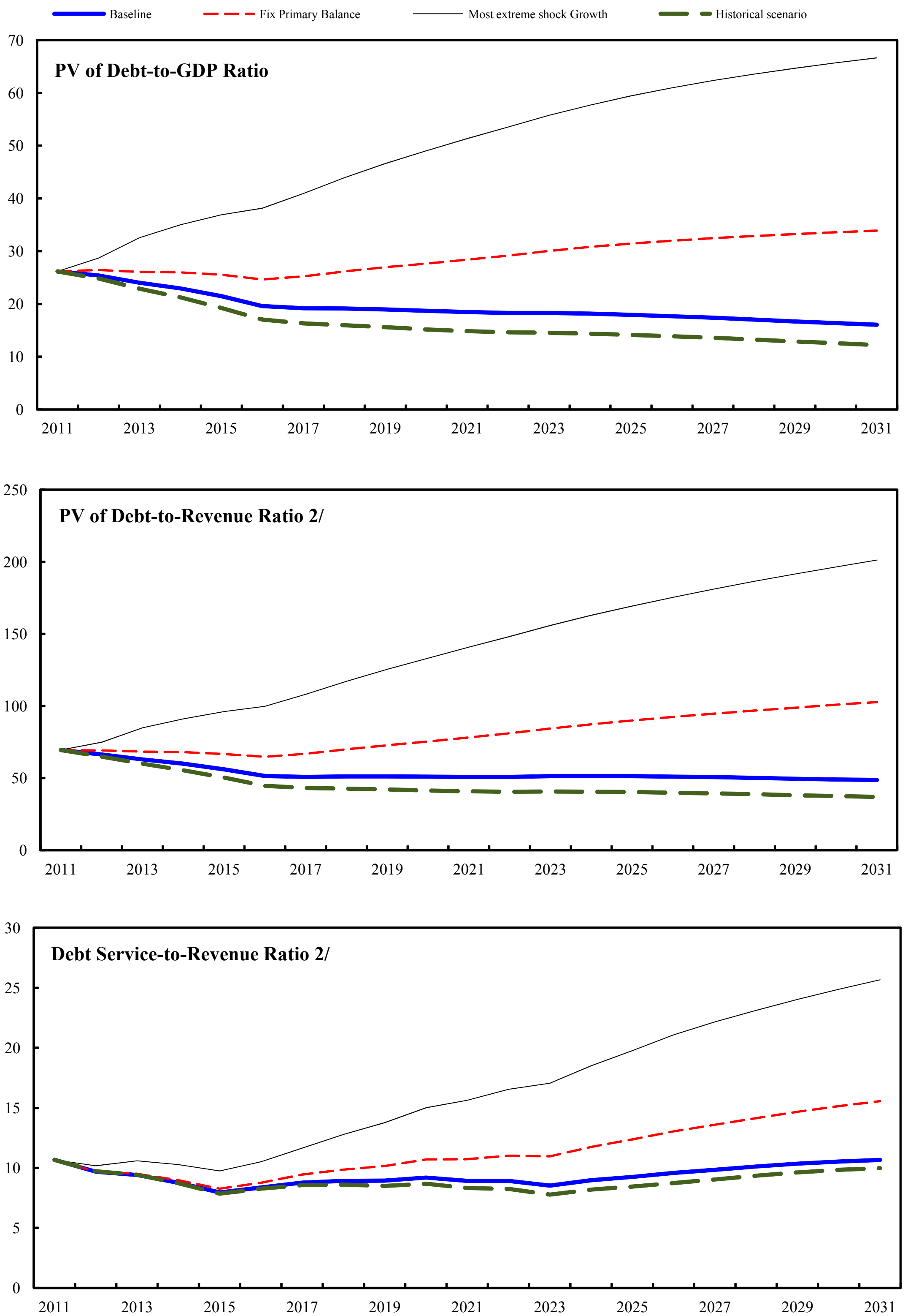
Figure 1.b. Moldova: Indicators of Public and Publicly Guaranteed External Debt
under Alternatives Scenarios, 2011-2031 1/



Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in 2021. In figure b. it corresponds to a Exports shock; in c. to a Exports shock; in d. to a Exports shock; in e. to a Exports shock and in figure f. to a Exports shock

Figure 2: Moldova: Indicators of Public Debt Under Alternative Scenarios, 2011-2031 1/



Sources: Country authorities; and 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 1.: External Debt Sustainability Framework, Baseline Scenario, 2008-2031 1/
(In percent of GDP, unless otherwise indicated)

	Actual			Historical Average 6/	Standard Deviation 6/	Projections									
	2008	2009	2010			2011	2012	2013	2014	2015	2016	2011-2016 Average	2021	2031	2017-2031 Average
External debt (nominal) 1/	**55.6**	**68.2**	**67.7**			**65.4**	**68.1**	**68.3**	**67.2**	**65.5**	**62.5**		**56.1**	**44.2**	
o/w public and publicly guaranteed (PPG)	16.0	23.2	22.5			21.5	22.0	20.8	19.9	18.9	17.5		15.5	11.5	
Change in external debt	-7.1	12.6	-0.6			-2.3	2.7	0.2	-1.1	-1.8	-2.9		-1.4	-1.0	
Identified net debt-creating flows	-12.6	12.5	0.5			2.6	2.7	1.0	-1.5	-2.5	-3.6		-1.9	-1.3	
Non-interest current account deficit	**15.5**	**7.2**	**7.4**	**8.0**	**5.3**	**7.7**	**8.4**	**8.0**	**6.7**	**6.0**	**5.6**		**6.4**	**6.9**	6.5
Deficit in balance of goods and services	53.3	36.6	38.9			40.0	40.3	39.4	37.7	36.5	35.7		35.6	35.6	
Exports	41.0	36.8	39.9			40.5	41.5	42.9	45.3	47.2	48.4		48.6	48.6	
Imports	94.3	73.4	78.8			80.5	81.8	82.2	83.0	83.7	84.1		84.2	84.2	
Net current transfers (negative = inflow)	-26.0	-21.2	-20.6	-20.8	4.6	-19.9	-19.8	-19.6	-18.9	-18.3	-17.5		-17.3	-17.3	-17.3
o/w official	-2.2	-1.9	-2.4			-2.0	-2.3	-2.6	-2.4	-2.1	-1.9		-1.9	-1.9	
Other current account flows (negative = net inflow)	-11.7	-8.2	-10.9			-12.4	-12.1	-11.8	-12.1	-12.2	-12.5		-11.9	-11.4	
Net FDI (negative = inflow)	**-11.8**	**-2.4**	**-3.5**	**-6.3**	**3.9**	**-4.0**	**-4.3**	**-5.5**	**-7.4**	**-7.7**	**-7.9**		**-7.3**	**-7.3**	-7.4
Endogenous debt dynamics 2/	**-16.4**	**7.6**	**-3.4**			**-1.2**	**-1.3**	**-1.5**	**-0.8**	**-0.8**	**-1.3**		**-0.9**	**-0.8**	
Contribution from nominal interest rate	0.8	1.3	0.9			1.6	1.6	1.6	2.0	1.9	1.7		1.7	1.3	
Contribution from real GDP growth	-3.6	3.7	-4.4			-2.8	-3.0	-3.1	-2.8	-2.8	-3.0		-2.6	-2.1	
Contribution from price and exchange rate changes	-13.6	2.6	0.0			…	…	…	…	…	…		…	…	
Residual (3-4) 3/	**5.5**	**0.1**	**-1.1**			**-4.8**	**0.0**	**-0.8**	**0.5**	**0.8**	**0.6**		**0.4**	**0.3**	
o/w exceptional financing	-1.3	-2.4	-2.5			-3.1	-3.4	-1.5	-0.9	-0.6	-0.7		-0.3	-0.1	
PV of external debt 4/	...	...	65.6			63.3	65.7	66.1	65.3	63.7	61.0		54.8	42.8	
In percent of exports	...	...	164.3			156.2	158.1	154.3	144.0	135.1	125.9		112.8	88.1	
PV of PPG external debt	**...**	**...**	**20.5**			**19.3**	**19.5**	**18.6**	**18.0**	**17.2**	**16.0**		**14.2**	**10.0**	
In percent of exports	**...**	**...**	**51.2**			**47.7**	**47.0**	**43.4**	**39.6**	**36.4**	**33.0**		**29.2**	**20.7**	
In percent of government revenues	**...**	**...**	**57.5**			**54.9**	**54.2**	**51.6**	**49.5**	**47.0**	**43.5**		**40.5**	**31.6**	
Debt service-to-exports ratio (in percent)	**14.9**	**19.9**	**17.6**			**19.3**	**17.5**	**14.4**	**15.9**	**15.9**	**14.9**		**15.2**	**11.6**	
PPG debt service-to-exports ratio (in percent)	**3.3**	**4.4**	**3.3**			**3.1**	**2.8**	**2.9**	**2.7**	**2.3**	**3.0**		**3.3**	**3.8**	
PPG debt service-to-revenue ratio (in percent)	**3.5**	**4.4**	**3.7**			**3.5**	**3.2**	**3.5**	**3.4**	**3.0**	**4.0**		**4.6**	**5.8**	
Total gross financing need (Millions of U.S. dollars)	1730.8	2018.4	2014.2			2362.7	2690.3	2819.4	2970.0	3127.8	3253.3		4804.6	9771.8	
Non-interest current account deficit that stabilizes debt ratio	22.7	-5.4	8.0			10.0	5.7	7.8	7.7	7.8	8.5		7.8	7.9	
Key macroeconomic assumptions															
Real GDP growth (in percent)	7.8	-6.0	6.9	4.5	4.9	5.0	5.0	5.0	4.5	4.5	5.0	4.8	5.0	5.0	5.0
GDP deflator in US dollar terms (change in percent)	27.6	-4.5	0.0	12.4	12.8	14.7	4.5	4.6	4.6	4.6	4.6	6.3	3.5	3.5	3.5
Effective interest rate (percent) 5/	1.7	2.1	1.5	2.2	0.6	2.9	2.8	2.6	3.2	3.2	2.9	2.9	3.2	3.0	3.2
Growth of exports of G&S (US dollar terms, in percent)	24.2	-19.4	16.0	13.2	17.3	22.1	12.5	13.3	15.6	13.7	12.8	15.0	8.7	8.7	8.7
Growth of imports of G&S (US dollar terms, in percent)	32.1	-30.1	14.8	17.3	22.6	23.1	11.5	10.3	10.3	10.2	10.4	12.6	8.7	8.7	8.7
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	27.9	27.9	21.1	20.6	20.8	20.1	23.0	9.1	2.9	7.0
Government revenues (excluding grants, in percent of GDP)	38.9	36.8	35.6			35.2	36.0	36.1	36.3	36.5	36.7		35.0	31.8	34.1
Aid flows (in Millions of US dollars) 7/	127.0	137.3	225.1			227.3	227.8	208.2	220.7	204.8	190.2		255.8	492.0	
o/w Grants	102.8	115.9	161.2			174.4	166.6	171.4	180.7	169.8	155.2		215.8	452.0	
o/w Concessional loans	24.2	21.4	63.9			53.0	61.2	36.8	40.0	35.0	35.0		40.0	40.0	
Grant-equivalent financing (in percent of GDP) 8/	...	...	...			3.3	3.2	2.4	2.3	2.0	1.7		1.5	1.2	1.4
Grant-equivalent financing (in percent of external financing) 8/	...	...	...			60.9	55.1	63.1	61.5	62.8	59.4		43.6	40.3	42.5
Memorandum items:															
Nominal GDP (Millions of US dollars)	6054.8	5437.7	5810.4			6999.4	7680.4	8433.0	9217.0	10071.6	11062.6		16793.2	38698.0	
Nominal dollar GDP growth	37.6	-10.2	6.9			20.5	9.7	9.8	9.3	9.3	9.8	11.4	8.7	8.7	8.7
PV of PPG external debt (in Millions of US dollars)			1209.9			1321.3	1483.3	1555.4	1640.6	1713.5	1749.4		2358.9	3852.8	
(PVt-PVt-1)/GDPt-1 (in percent)						1.9	2.3	0.9	1.0	0.8	0.4	1.2	0.9	0.4	0.7
Gross workers' remittances (Millions of US dollars)	1795.8	1124.4	1282.4			1592.5	1784.9	1985.2	2165.7	2394.4	2632.5		3431.6	5831.4	
PV of PPG external debt (in percent of GDP + remittances)	...	...	16.8			15.7	15.8	15.1	14.5	13.9	12.9		11.8	8.7	
PV of PPG external debt (in percent of exports + remittances)	...	...	33.0			30.5	30.1	28.0	26.1	24.2	22.1		20.5	15.8	
Debt service of PPG external debt (in percent of exports + remittances)	...	...	2.1			2.0	1.8	1.9	1.8	1.6	2.0		2.3	2.9	

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 2.Moldova: Public Sector Debt Sustainability Framework, Baseline Scenario, 2008-2031
(In percent of GDP, unless otherwise indicated)

	Actual					Estimate	Projections								
	2008	2009	2010	Average 5/	Standard Deviation 5/	2011	2012	2013	2014	2015	2016	2011-16 Average	2021	2031	2017-31 Average
Public sector debt 1/	21.6	31.7	29.9			28.3	27.8	26.2	24.9	23.2	21.2		19.8	17.5	
o/w foreign-currency denominated	16.0	23.2	22.5			21.5	22.0	20.8	19.9	18.9	17.5		15.5	11.5	
Change in public sector debt	-5.9	10.1	-1.8			-1.6	-0.4	-1.7	-1.3	-1.7	-2.0		-0.2	-0.3	
Identified debt-creating flows	-6.5	10.0	-3.3			-2.6	-2.6	-2.2	-1.6	-1.5	-1.6		-1.1	-1.0	
Primary deficit	-0.2	4.9	1.7	-0.8	2.9	1.1	0.0	-0.1	-0.1	-0.1	-0.2	0.1	-0.4	-0.4	-0.4
Revenue and grants	40.6	38.9	38.3			37.6	38.2	38.1	38.2	38.2	38.1		36.3	33.0	
of which: grants	1.7	2.1	2.8			2.5	2.2	2.0	2.0	1.7	1.4		1.3	1.2	
Primary (noninterest) expenditure	40.4	43.8	40.0			38.7	38.2	38.0	38.1	38.1	37.9		35.9	32.6	
Automatic debt dynamics	-4.4	5.4	-4.5			-3.1	-2.1	-1.7	-1.5	-1.4	-1.4		-0.8	-0.7	
Contribution from interest rate/growth differential	-5.5	3.5	-2.0			-3.9	-1.8	-1.7	-1.5	-1.4	-1.4		-0.8	-0.7	
of which: contribution from average real interest rate	-3.5	2.1	0.1			-2.4	-0.5	-0.4	-0.3	-0.3	-0.3		0.2	0.2	
of which: contribution from real GDP growth	-2.0	1.4	-2.0			-1.4	-1.3	-1.3	-1.1	-1.1	-1.1		-1.0	-0.8	
Contribution from real exchange rate depreciation	1.1	2.0	-2.5			0.8	-0.3	0.0	0.0	0.0	0.0		...	...	
Other identified debt-creating flows	-1.9	-0.4	-0.5			-0.6	-0.5	-0.4	-0.1	0.0	0.0		0.0	0.0	
Privatization receipts (negative)	-1.9	-0.4	-0.5			-0.6	-0.5	-0.4	-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	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Other (specify, e.g. bank recapitalization)	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Residual, including asset changes	0.6	0.1	1.5			1.0	2.1	0.5	0.3	-0.2	-0.4		1.0	0.7	
Other Sustainability Indicators															
PV of public sector debt	...	...	27.8			26.1	25.4	24.0	22.9	21.4	19.6		18.5	16.1	
o/w foreign-currency denominated	...	...	20.5			19.3	19.5	18.6	18.0	17.2	16.0		14.2	10.0	
o/w external	...	...	20.5			19.3	19.5	18.6	18.0	17.2	16.0		14.2	10.0	
PV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...	
Gross financing need 2/	6.7	10.2	9.8			11.0	9.4	8.7	8.0	7.2	6.7		6.3	5.6	
PV of public sector debt-to-revenue and grants ratio (in percent)	…	…	72.6			69.4	66.5	63.0	60.0	56.1	51.5		50.9	48.7	
PV of public sector debt-to-revenue ratio (in percent)	…	…	78.3			74.4	70.5	66.5	63.2	58.7	53.4		52.8	50.5	
o/w external 3/	…	…	57.5			54.9	54.2	51.6	49.5	47.0	43.5		40.5	31.6	
Debt service-to-revenue and grants ratio (in percent) 4/	10.4	6.9	4.8			10.7	9.7	9.4	8.8	8.0	8.4		8.9	10.7	
Debt service-to-revenue ratio (in percent) 4/	10.8	7.3	5.1			11.4	10.3	9.9	9.2	8.3	8.7		9.3	11.1	
Primary deficit that stabilizes the debt-to-GDP ratio	5.7	-5.2	3.4			2.7	0.4	1.6	1.2	1.6	1.8		-0.2	-0.1	
Key macroeconomic and fiscal assumptions															
Real GDP growth (in percent)	7.8	-6.0	6.9	4.5	4.9	5.0	5.0	5.0	4.5	4.5	5.0	4.8	5.0	5.0	5.0
Average nominal interest rate on forex debt (in percent)	1.8	2.1	1.5	2.5	0.9	1.4	1.2	1.3	1.4	1.6	1.8	1.4	3.2	4.1	3.4
Average real interest rate on domestic debt (in percent)	5.4	15.7	-3.6	0.5	8.5	0.8	3.0	5.1	5.1	4.6	4.6	3.9	5.2	2.3	4.5
Real exchange rate depreciation (in percent, + indicates depreciation)	7.3	10.8	-11.3	0.8	7.9	4.1	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	9.2	2.2	11.2	9.9	4.4	8.8	6.3	5.0	5.0	5.0	5.0	5.9	5.0	5.0	5.0
Growth of real primary spending (deflated by GDP deflator, in percent)	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Grant element of new external borrowing (in percent)	...	...	...	…	…	27.9	27.9	21.1	20.6	20.8	20.1	23.0	9.1	2.9	...

Sources: Country authorities; and staff estimates and projections.
1/ The public debt represents central government direct and guaranteed debt and National Bank of Moldova's borrowing from the IMF on the gross basis.
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 3.Moldova: 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+remittances ratio							
Baseline	16	16	15	15	14	13	**12**	9
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011-2031 1/	16	13	12	13	15	17	**22**	20
A2. New public sector loans on less favorable terms in 2011-2031 2	16	16	16	16	15	14	**15**	14
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012-2013	16	16	16	16	15	14	**13**	9
B2. Export value growth at historical average minus one standard deviation in 2012-2013 3/	16	21	29	28	26	24	**17**	9
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012-2013	16	16	16	16	15	14	**13**	9
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012-2013 4/	16	21	25	23	22	20	**15**	9
B5. Combination of B1-B4 using one-half standard deviation shocks	16	20	26	25	24	22	**16**	9
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	16	20	19	19	18	17	**15**	11
	PV of debt-to-exports+remittances ratio							
Baseline	31	30	28	26	24	22	**21**	16
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011-2031 1/	31	26	23	24	27	31	**41**	40
A2. New public sector loans on less favorable terms in 2011-2031 2	31	31	29	28	27	25	**26**	25
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012-2013	31	30	28	26	24	22	**20**	16
B2. Export value growth at historical average minus one standard deviation in 2012-2013 3/	31	43	66	61	56	51	**37**	21
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012-2013	31	30	28	26	24	22	**20**	16
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012-2013 4/	31	41	48	41	38	35	**26**	16
B5. Combination of B1-B4 using one-half standard deviation shocks	31	39	53	48	44	40	**30**	18
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	31	30	28	26	24	22	**20**	16
	PV of debt-to-revenue ratio							
Baseline	55	54	52	50	47	44	**40**	32
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011-2031 1/	55	45	40	43	49	54	**68**	65
A2. New public sector loans on less favorable terms in 2011-2031 2	55	56	54	53	52	49	**51**	49
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012-2013	55	57	57	55	52	48	**45**	35
B2. Export value growth at historical average minus one standard deviation in 2012-2013 3/	55	70	99	94	89	82	**58**	32
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012-2013	55	56	56	54	51	47	**44**	34
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012-2013 4/	55	68	82	79	75	68	**52**	32
B5. Combination of B1-B4 using one-half standard deviation shocks	55	67	90	86	81	75	**55**	33
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	55	75	72	69	65	60	**56**	44

Table 3.Moldova: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2011-2031 (continued)

(In percent)

Debt service-to-exports+remittances ratio

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

Sources: Country authorities; and staff estimates and projections.

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

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

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

4/ Includes official and private transfers and FDI.

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

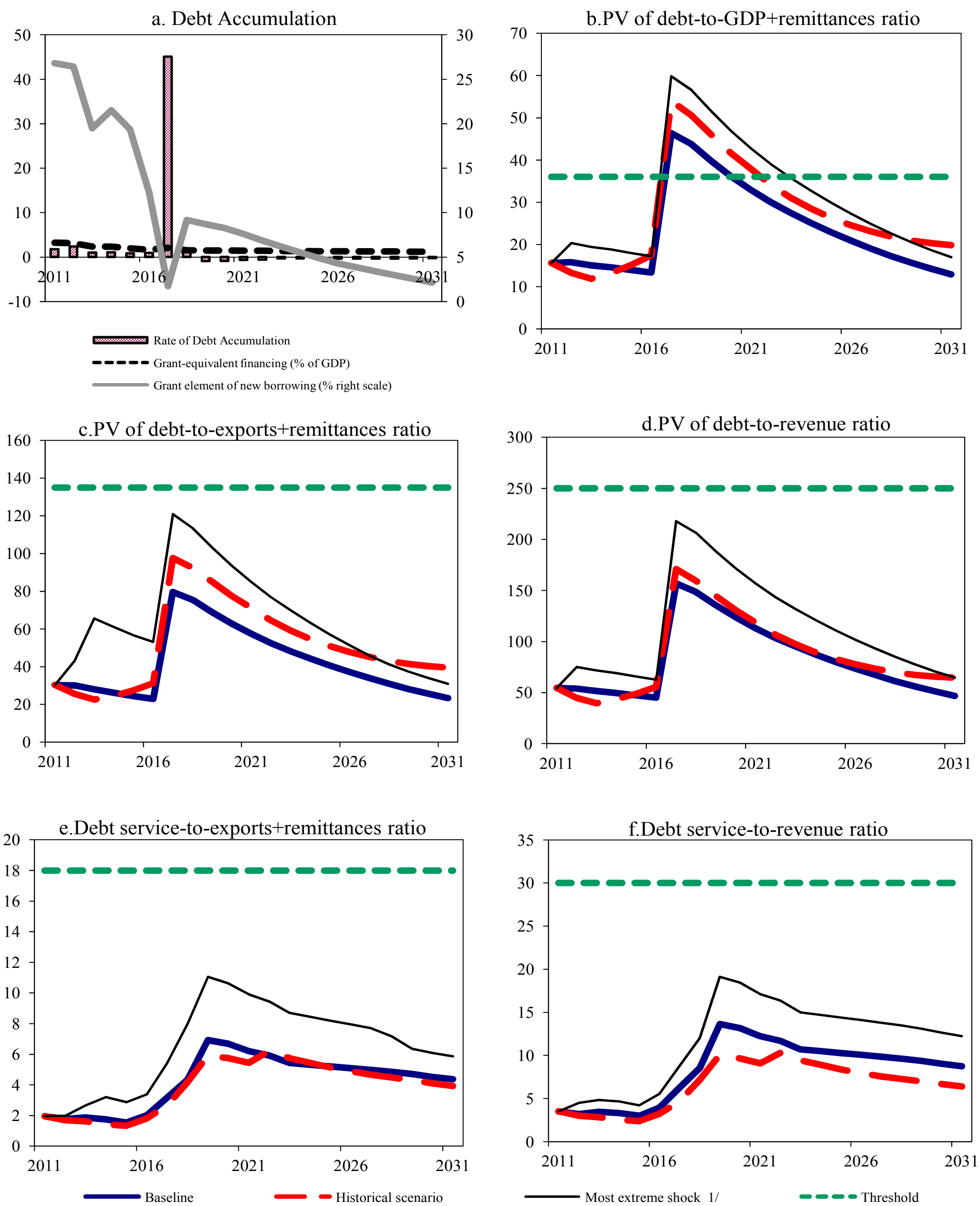
6/ Applies to all stress scenarios except for A2 (less favorable financing) in which the terms on all new financing are as specified in footnote 2.

Table 4.Moldova: Sensitivity Analysis 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	25	24	23	21	20	18	16
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	26	25	23	21	19	17	15	12
A2. Primary balance is unchanged from 2011	26	26	26	26	26	25	28	34
A3. Permanently lower GDP growth 1/	26	26	26	26	26	26	39	81
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2012-2013	26	29	33	35	37	38	51	67
B2. Primary balance is at historical average minus one standard deviations in 2012-2013	26	27	28	27	25	23	21	18
B3. Combination of B1-B2 using one half standard deviation shocks	26	27	27	28	28	28	35	42
B4. One-time 30 percent real depreciation in 2012	26	33	31	29	28	25	24	22
B5. 10 percent of GDP increase in other debt-creating flows in 2012	26	35	33	32	30	27	25	20
PV of Debt-to-Revenue Ratio 2/								
Baseline	69	66	63	60	56	51	51	49
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	69	65	60	56	50	45	41	37
A2. Primary balance is unchanged from 2011	69	69	68	68	67	65	78	103
A3. Permanently lower GDP growth 1/	69	68	67	67	68	68	107	244
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2012-2013	69	75	85	91	96	100	141	201
B2. Primary balance is at historical average minus one standard deviations in 2012-2013	69	72	74	70	66	61	59	54
B3. Combination of B1-B2 using one half standard deviation shocks	69	70	70	72	73	73	95	127
B4. One-time 30 percent real depreciation in 2012	69	86	81	77	72	67	65	65
B5. 10 percent of GDP increase in other debt-creating flows in 2012	69	92	87	83	78	72	68	60
Debt Service-to-Revenue Ratio 2/								
Baseline	11	10	9	9	8	8	9	11
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	11	10	9	9	8	8	8	10
A2. Primary balance is unchanged from 2011	11	10	9	9	8	9	11	16
A3. Permanently lower GDP growth 1/	11	10	10	9	8	9	12	27
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2012-2013	11	10	11	10	10	11	16	26
B2. Primary balance is at historical average minus one standard deviations in 2012-2013	11	10	10	9	8	9	10	11
B3. Combination of B1-B2 using one half standard deviation shocks	11	10	10	9	9	9	12	18
B4. One-time 30 percent real depreciation in 2012	11	10	11	10	9	10	12	16
B5. 10 percent of GDP increase in other debt-creating flows in 2012	11	10	10	10	9	9	11	12

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

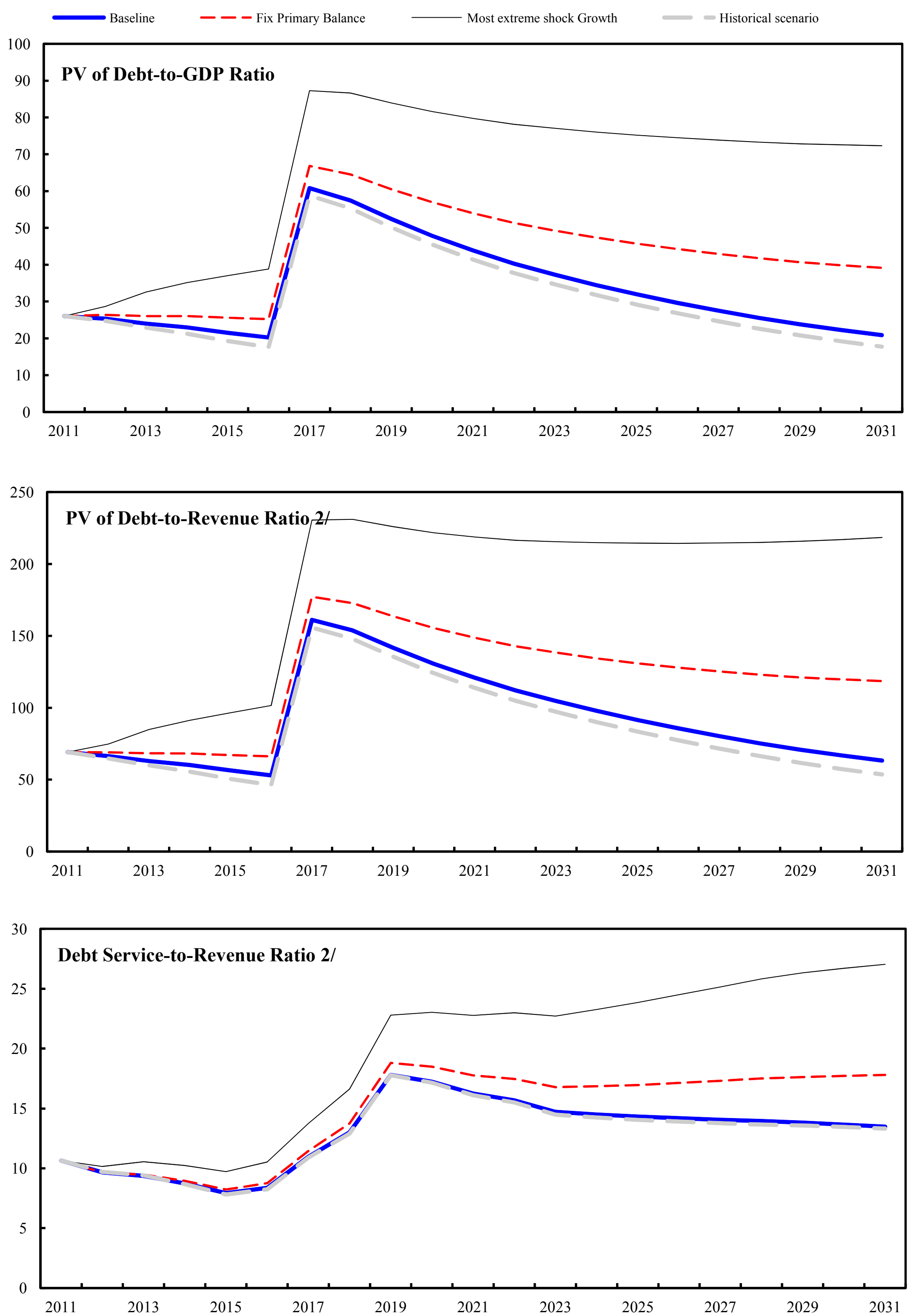
Figure 3: Moldova: Indicators of Public and Publicly Guaranteed External Debt under Alternatives Scenarios -- Transnistria, 2011-2031 1/



Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in 2021. In figure b. it corresponds to a One-time depreciation shock; in c. to a Exports shock; in d. to a One-time depreciation shock; in e. to a Exports shock and in figure f. to a One-time depreciation shock

Figure 4.Moldova: Indicators of Public Debt Under Alternative Scenarios --Transnistria, 2011-2031 1/



Sources: Country authorities; and 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 5.: External Debt Sustainability Framework, Baseline Scenario -- Transnistria, 2008-2031 1/
(In percent of GDP, unless otherwise indicated)

	Actual			Historical Average 6/	Standard Deviation 6/	Projections									
	2008	2009	2010			2011	2012	2013	2014	2015	2016	2011-2016 Average	2021	2031	2017-2031 Average
External debt (nominal) 1/	**55.6**	**68.2**	**67.7**			**65.2**	**67.9**	**68.1**	**67.2**	**65.4**	**63.0**		**82.3**	**49.2**	
o/w public and publicly guaranteed (PPG)	16.0	23.2	22.5			21.2	21.8	20.6	19.9	18.9	17.9		41.7	16.5	
Change in external debt	-7.1	12.6	-0.6			-2.5	2.8	0.2	-1.0	-1.7	-2.5		-5.3	-2.1	
Identified net debt-creating flows	-12.1	13.4	1.1			2.6	2.8	1.0	-1.5	-2.5	-3.6		-2.2	-1.8	
Non-interest current account deficit	**15.5**	**7.2**	**7.4**	**8.0**	**5.3**	**7.7**	**8.4**	**8.0**	**6.7**	**6.0**	**5.6**		**6.4**	**6.8**	6.5
Deficit in balance of goods and services	53.3	36.6	38.9			40.0	40.3	39.4	37.7	36.5	35.7		35.6	35.6	
Exports	41.0	36.8	39.9			40.5	41.5	42.9	45.3	47.2	48.4		48.6	48.6	
Imports	94.3	73.4	78.8			80.5	81.8	82.2	83.0	83.7	84.1		84.2	84.2	
Net current transfers (negative = inflow)	-26.0	-21.2	-20.6	-20.8	4.6	-19.9	-19.8	-19.6	-18.9	-18.3	-17.5		-17.3	-17.3	-17.3
o/w official	-2.2	-1.9	-2.4			-2.0	-2.3	-2.6	-2.4	-2.1	-1.9		-1.9	-1.9	
Other current account flows (negative = net inflow)	-11.7	-8.2	-10.9			-12.4	-12.1	-11.8	-12.1	-12.2	-12.5		-11.9	-11.5	
Net FDI (negative = inflow)	**-11.8**	**-2.4**	**-3.5**	**-6.3**	**3.9**	**-4.0**	**-4.3**	**-5.5**	**-7.4**	**-7.7**	**-7.9**		**-7.4**	**-7.8**	-7.5
Endogenous debt dynamics 2/	**-15.9**	**8.5**	**-2.8**			**-1.2**	**-1.3**	**-1.5**	**-0.8**	**-0.8**	**-1.3**		**-1.2**	**-0.9**	
Contribution from nominal interest rate	1.3	2.2	1.5			1.6	1.6	1.6	2.0	1.9	1.7		2.8	1.5	
Contribution from real GDP growth	-3.6	3.7	-4.4			-2.8	-3.0	-3.1	-2.8	-2.8	-3.0		-4.0	-2.4	
Contribution from price and exchange rate changes	-13.6	2.6	0.0			…	…	…	…	…	…		…	…	
Residual (3-4) 3/	**5.0**	**-0.8**	**-1.7**			**-5.0**	**0.0**	**-0.8**	**0.6**	**0.8**	**1.1**		**-3.1**	**-0.3**	
o/w exceptional financing	-1.3	-2.4	-2.5			-3.1	-3.4	-1.5	-0.9	-0.6	-0.7		-0.3	-0.1	
PV of external debt 4/	...	...	65.6			63.1	65.6	66.1	65.3	63.8	61.6		80.2	47.6	
In percent of exports	...	...	164.3			155.9	158.0	154.3	144.1	135.3	127.2		165.1	98.1	
PV of PPG external debt	**...**	**...**	**20.5**			**19.2**	**19.5**	**18.6**	**18.0**	**17.3**	**16.6**		**39.6**	**14.9**	
In percent of exports	**...**	**...**	**51.2**			**47.4**	**46.9**	**43.5**	**39.8**	**36.6**	**34.2**		**81.5**	**30.7**	
In percent of government revenues	**...**	**...**	**57.5**			**54.6**	**54.0**	**51.6**	**49.7**	**47.3**	**45.2**		**113.1**	**46.8**	
Debt service-to-exports ratio (in percent)	**14.9**	**19.9**	**17.6**			**19.3**	**17.5**	**14.4**	**15.9**	**15.9**	**14.9**		**20.6**	**13.6**	
PPG debt service-to-exports ratio (in percent)	**3.3**	**4.4**	**3.3**			**3.1**	**2.8**	**2.9**	**2.7**	**2.3**	**3.0**		**8.8**	**5.7**	
PPG debt service-to-revenue ratio (in percent)	**3.5**	**4.4**	**3.7**			**3.5**	**3.2**	**3.5**	**3.3**	**3.0**	**4.0**		**12.2**	**8.7**	
Total gross financing need (Millions of U.S. dollars)	1730.8	2018.4	2014.2			2362.7	2690.3	2819.4	2970.0	3127.8	3253.3		5240.2	9965.3	
Non-interest current account deficit that stabilizes debt ratio	22.7	-5.4	8.0			10.2	5.6	7.8	7.6	7.8	8.1		11.7	9.0	
Key macroeconomic assumptions															
Real GDP growth (in percent)	7.8	-6.0	6.9	4.5	4.9	5.0	5.0	5.0	4.5	4.5	5.0	4.8	5.0	5.0	5.0
GDP deflator in US dollar terms (change in percent)	27.6	-4.5	0.0	12.4	12.8	14.7	4.5	4.6	4.6	4.6	4.6	6.3	3.5	3.5	3.5
Effective interest rate (percent) 5/	2.8	3.5	2.4	3.5	0.8	2.8	2.8	2.6	3.2	3.1	2.9	2.9	3.5	3.1	3.5
Growth of exports of G&S (US dollar terms, in percent)	24.2	-19.4	16.0	13.2	17.3	22.1	12.5	13.3	15.6	13.7	12.8	15.0	8.7	8.7	8.7
Growth of imports of G&S (US dollar terms, in percent)	32.1	-30.1	14.8	17.3	22.6	23.1	11.5	10.3	10.3	10.2	10.4	12.6	8.7	8.7	8.7
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	26.8	26.4	19.5	21.5	19.4	12.3	21.0	7.6	2.1	5.2
Government revenues (excluding grants, in percent of GDP)	38.9	36.8	35.6			35.2	36.0	36.1	36.3	36.5	36.7		35.0	31.8	34.1
Aid flows (in Millions of US dollars) 7/	127.0	137.3	225.1			227.3	227.8	208.2	231.2	204.8	190.2		255.8	492.0	
o/w Grants	102.8	115.9	161.2			174.4	166.6	171.4	180.7	169.8	155.2		215.8	452.0	
o/w Concessional loans	24.2	21.4	63.9			53.0	61.2	36.8	50.5	35.0	35.0		40.0	40.0	
Grant-equivalent financing (in percent of GDP) 8/	...	...	...			3.2	3.1	2.4	2.4	2.0	1.6		1.5	1.2	1.4
Grant-equivalent financing (in percent of external financing) 8/	...	...	...			61.7	54.1	62.3	61.0	62.2	49.6		41.3	38.3	37.7
Memorandum items:															
Nominal GDP (Millions of US dollars)	6054.8	5437.7	5810.4			6999.4	7680.4	8433.0	9217.0	10071.6	11062.6		16793.2	38698.0	
Nominal dollar GDP growth	37.6	-10.2	6.9			20.5	9.7	9.8	9.3	9.3	9.8	11.4	8.7	8.7	8.7
PV of PPG external debt (in Millions of US dollars)			1209.9			1313.2	1480.0	1555.8	1646.8	1723.3	1816.0		6588.4	5712.4	
(PVt-PVt-1)/GDPt-1 (in percent)						1.8	2.4	1.0	1.1	0.8	0.9	1.3	-0.7	-0.3	2.7
Gross workers' remittances (Millions of US dollars)	1795.8	1124.4	1282.4			1592.5	1784.9	1985.2	2165.7	2394.4	2632.5		3431.6	5831.4	
PV of PPG external debt (in percent of GDP + remittances)	...	...	16.8			15.6	15.8	15.1	14.6	14.0	13.4		32.9	12.9	
PV of PPG external debt (in percent of exports + remittances)	...	...	33.0			30.4	30.1	28.0	26.2	24.3	22.9		57.4	23.4	
Debt service of PPG external debt (in percent of exports + remittances)	...	...	2.1			2.0	1.8	1.9	1.8	1.5	2.0		6.2	4.4	

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 6.Moldova: Public Sector Debt Sustainability Framework, Baseline Scenario--Transnistria, 2008-2031
(In percent of GDP, unless otherwise indicated)

	Actual					Estimate	Projections								
	2008	2009	2010	Average 5/	Standard Deviation 5/	2011	2012	2013	2014	2015	2016	2011-16 Average	2021	2031	2017-31 Average
Public sector debt 1/	21.6	31.7	29.9			28.1	27.7	26.0	24.8	23.1	21.6		46.0	22.5	
o/w foreign-currency denominated	16.0	23.2	22.5			21.2	21.8	20.6	19.9	18.9	17.9		41.7	16.5	
Change in public sector debt	-5.9	10.1	-1.8			-1.8	-0.4	-1.7	-1.2	-1.7	-1.6		-4.1	-1.4	
Identified debt-creating flows	-6.5	10.0	-3.3			-2.6	-2.5	-2.2	-1.6	-1.5	-1.6		-2.5	-1.4	
Primary deficit	-0.2	4.9	1.7	-0.8	2.9	1.1	0.0	-0.1	-0.1	-0.1	-0.2	0.1	-0.4	-0.4	-0.4
Revenue and grants	40.6	38.9	38.3			37.6	38.2	38.1	38.2	38.2	38.1		36.3	33.0	
of which: grants	1.7	2.1	2.8			2.5	2.2	2.0	2.0	1.7	1.4		1.3	1.2	
Primary (noninterest) expenditure	40.4	43.8	40.0			38.7	38.2	38.0	38.2	38.1	37.9		35.9	32.6	
Automatic debt dynamics	-4.4	5.4	-4.5			-3.1	-2.0	-1.7	-1.5	-1.4	-1.4		-2.1	-0.9	
Contribution from interest rate/growth differential	-5.5	3.5	-2.0			-3.9	-1.8	-1.7	-1.5	-1.4	-1.4		-2.1	-0.9	
of which: contribution from average real interest rate	-3.5	2.1	0.1			-2.4	-0.5	-0.4	-0.3	-0.3	-0.3		0.2	0.2	
of which: contribution from real GDP growth	-2.0	1.4	-2.0			-1.4	-1.3	-1.3	-1.1	-1.1	-1.1		-2.4	-1.1	
Contribution from real exchange rate depreciation	1.1	2.0	-2.5			0.8	-0.2	0.0	0.0	0.0	0.0		...	...	
Other identified debt-creating flows	-1.9	-0.4	-0.5			-0.6	-0.5	-0.4	-0.1	0.0	0.0		0.0	0.0	
Privatization receipts (negative)	-1.9	-0.4	-0.5			-0.6	-0.5	-0.4	-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	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Other (specify, e.g. bank recapitalization)	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Residual, including asset changes	0.6	0.1	1.5			0.8	2.1	0.5	0.4	-0.2	0.0		-1.5	-0.1	
Other Sustainability Indicators															
PV of public sector debt	...	...	27.8			26.0	25.3	24.0	23.0	21.5	20.2		43.9	20.9	
o/w foreign-currency denominated	...	...	20.5			19.2	19.5	18.6	18.0	17.3	16.6		39.6	14.9	
o/w external	...	...	20.5			19.2	19.5	18.6	18.0	17.3	16.6		39.6	14.9	
PV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...	
Gross financing need 2/	6.7	10.2	9.8			11.0	9.4	8.7	8.0	7.2	6.7		9.0	6.6	
PV of public sector debt-to-revenue and grants ratio (in percent)	…	…	72.6			69.1	66.3	63.0	60.1	56.4	53.1		120.9	63.4	
PV of public sector debt-to-revenue ratio (in percent)	…	…	78.3			74.0	70.3	66.5	63.4	59.0	55.1		125.3	65.7	
o/w external 3/	…	…	57.5			54.6	54.0	51.6	49.7	47.3	45.2		113.1	46.8	
Debt service-to-revenue and grants ratio (in percent) 4/	10.4	6.9	4.8			10.7	9.7	9.4	8.7	7.9	8.4		16.2	13.5	
Debt service-to-revenue ratio (in percent) 4/	10.8	7.3	5.1			11.4	10.2	9.9	9.2	8.3	8.7		16.8	14.0	
Primary deficit that stabilizes the debt-to-GDP ratio	5.7	-5.2	3.4			2.9	0.4	1.6	1.1	1.6	1.4		3.7	1.0	
Key macroeconomic and fiscal assumptions															
Real GDP growth (in percent)	7.8	-6.0	6.9	4.5	4.9	5.0	5.0	5.0	4.5	4.5	5.0	4.8	5.0	5.0	5.0
Average nominal interest rate on forex debt (in percent)	1.8	2.1	1.5	2.5	0.9	1.4	1.1	1.2	1.4	1.6	1.8	1.4	3.6	3.9	3.9
Average real interest rate on domestic debt (in percent)	5.4	15.7	-3.6	0.5	8.5	0.8	3.0	5.1	5.1	4.6	4.6	3.9	5.2	2.3	4.5
Real exchange rate depreciation (in percent, + indicates depreciation)	7.3	10.8	-11.3	0.8	7.9	4.1	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	9.2	2.2	11.2	9.9	4.4	8.8	6.3	5.0	5.0	5.0	5.0	5.9	5.0	5.0	5.0
Growth of real primary spending (deflated by GDP deflator, in percent)	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Grant element of new external borrowing (in percent)	...	...	...	…	…	26.8	26.4	19.5	21.5	19.4	12.3	21.0	7.6	2.1	...

Sources: Country authorities; and staff estimates and projections.

1/ The public debt represents central government direct and guaranteed debt and National Bank of Moldova's borrowing from the IMF on the gross basis.

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 7.Moldova: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt -- Transnistria, 2011-2031
(In percent)

	Projections							
	2011	2012	2013	2014	2015	2016	**2021**	2031
PV of debt-to-GDP+remittances ratio								
Baseline	16	16	15	15	14	13	**33**	13
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011-2031 1/	16	13	12	13	15	17	**38**	20
A2. New public sector loans on less favorable terms in 2011-2031 2	16	16	16	16	15	15	**39**	20
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012-2013	16	16	16	16	15	14	**35**	14
B2. Export value growth at historical average minus one standard deviation in 2012-2013 3/	16	20	29	28	26	25	**39**	13
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012-2013	16	16	16	16	15	14	**35**	14
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012-2013 4/	16	21	25	23	22	21	**37**	13
B5. Combination of B1-B4 using one-half standard deviation shocks	16	20	26	25	24	23	**38**	14
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	16	20	19	19	18	17	**43**	17
PV of debt-to-exports+remittances ratio								
Baseline	30	30	28	26	24	23	**57**	23
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011-2031 1/	30	26	23	25	27	31	**71**	40
A2. New public sector loans on less favorable terms in 2011-2031 2	30	31	29	28	26	25	**67**	37
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012-2013	30	30	28	26	24	23	**57**	23
B2. Export value growth at historical average minus one standard deviation in 2012-2013 3/	30	43	66	61	57	53	**85**	31
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012-2013	30	30	28	26	24	23	**57**	23
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012-2013 4/	30	41	48	42	39	36	**64**	24
B5. Combination of B1-B4 using one-half standard deviation shocks	30	39	53	48	44	42	**72**	27
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	30	30	28	26	24	23	**57**	23
PV of debt-to-revenue ratio								
Baseline	55	54	52	50	47	45	**113**	47
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011-2031 1/	55	45	40	44	49	56	**119**	65
A2. New public sector loans on less favorable terms in 2011-2031 2	55	56	54	53	51	50	**133**	74
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012-2013	55	56	57	55	52	50	**124**	51
B2. Export value growth at historical average minus one standard deviation in 2012-2013 3/	55	70	99	95	90	85	**134**	49
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012-2013	55	56	56	54	52	49	**123**	51
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012-2013 4/	55	68	83	79	75	71	**126**	48
B5. Combination of B1-B4 using one-half standard deviation shocks	55	67	90	86	81	77	**133**	49
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	55	75	72	69	66	63	**157**	65

Table 7.Moldova: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt -- Transnistria, 2011-2031 (continued)

(In percent)

Debt service-to-exports+remittances ratio

Baseline	2	2	2	2	2	2	**6**	4
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011-2031 1/	2	2	2	1	1	2	**5**	4
A2. New public sector loans on less favorable terms in 2011-2031 2	2	2	2	2	2	2	**4**	7
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012-2013	2	2	2	2	2	2	**6**	4
B2. Export value growth at historical average minus one standard deviation in 2012-2013 3/	2	2	3	3	3	3	**10**	6
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012-2013	2	2	2	2	2	2	**6**	4
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012-2013 4/	2	2	2	2	2	2	**7**	5
B5. Combination of B1-B4 using one-half standard deviation shocks	2	2	2	3	2	3	**8**	5
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	2	2	2	2	2	2	**6**	4
Debt service-to-revenue ratio								
Baseline	4	3	3	3	3	4	**12**	9
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011-2031 1/	4	3	3	3	2	3	**9**	6
A2. New public sector loans on less favorable terms in 2011-2031 2	4	3	4	3	3	4	**8**	13
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012-2013	4	3	4	4	3	4	**14**	10
B2. Export value growth at historical average minus one standard deviation in 2012-2013 3/	4	3	4	5	5	5	**16**	9
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012-2013	4	3	4	4	3	4	**13**	10
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012-2013 4/	4	3	4	4	4	5	**14**	9
B5. Combination of B1-B4 using one-half standard deviation shocks	4	3	4	5	4	5	**15**	9
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	4	4	5	5	4	6	**17**	12
Memorandum item:								
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	3	3	3	3	3	3	**3**	3

Sources: Country authorities; and staff estimates and projections.

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

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

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

4/ Includes official and private transfers and FDI.

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

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

Table 8.Moldova: Sensitivity Analysis for Key Indicators of Public Debt--Transnistria 2011-2031

	Projections							
	2011	2012	2013	2014	2015	2016	2021	2031
PV of Debt-to-GDP Ratio								
Baseline	26	25	24	23	22	20	44	21
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	26	25	23	21	19	18	41	18
A2. Primary balance is unchanged from 2011	26	26	26	26	26	25	54	39
A3. Permanently lower GDP growth 1/	26	26	26	26	26	27	67	87
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2012-2013	26	29	33	35	37	39	80	72
B2. Primary balance is at historical average minus one standard deviations in 2012-2013	26	27	28	27	25	24	47	23
B3. Combination of B1-B2 using one half standard deviation shocks	26	27	27	28	28	29	62	47
B4. One-time 30 percent real depreciation in 2012	26	33	31	29	28	26	52	31
B5. 10 percent of GDP increase in other debt-creating flows in 2012	26	35	33	32	30	28	50	25
PV of Debt-to-Revenue Ratio 2/								
Baseline	69	66	63	60	56	53	121	63
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	69	65	60	56	51	46	114	54
A2. Primary balance is unchanged from 2011	69	69	68	68	67	66	149	119
A3. Permanently lower GDP growth 1/	69	68	67	68	68	70	184	262
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2012-2013	69	75	85	91	96	102	219	218
B2. Primary balance is at historical average minus one standard deviations in 2012-2013	69	72	74	70	66	62	129	69
B3. Combination of B1-B2 using one half standard deviation shocks	69	70	70	73	74	75	170	143
B4. One-time 30 percent real depreciation in 2012	69	86	81	77	72	68	142	95
B5. 10 percent of GDP increase in other debt-creating flows in 2012	69	92	87	83	78	74	138	75
Debt Service-to-Revenue Ratio 2/								
Baseline	11	10	9	9	8	8	16	13
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	11	10	9	9	8	8	16	13
A2. Primary balance is unchanged from 2011	11	10	9	9	8	9	18	18
A3. Permanently lower GDP growth 1/	11	10	10	9	8	9	20	29
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2012-2013	11	10	11	10	10	11	23	27
B2. Primary balance is at historical average minus one standard deviations in 2012-2013	11	10	10	9	8	9	17	14
B3. Combination of B1-B2 using one half standard deviation shocks	11	10	10	9	9	9	19	20
B4. One-time 30 percent real depreciation in 2012	11	10	11	10	9	10	22	21
B5. 10 percent of GDP increase in other debt-creating flows in 2012	11	10	10	10	9	9	18	15

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