Mongolia: Joint IMF/World Bank Debt Sustainability Analysis Under the Debt Sustainability Framework for Low-Income Countries

This Debt Sustainability Analysis Under the Debt Sustainability Framework for Low-Income Countries on Mongolia was prepared by a staff team of both the International Monetary Fund and the World Bank as background documentation for the periodic consultation with the member country. It is based on the information available at the time it was completed on May 5, 2010. The views expressed in this document are those of the staff team and do not necessarily reflect the views of the government of Mongolia or the Executive Board of the IMF.

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MONGOLIA

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

Approved by Nigel Chalk and David Marston (IMF)
and Sudarshan Gooptu and Vikram Nehru (IDA)

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The staff's debt sustainability analysis (DSA) shows that Mongolia is at low risk of external debt distress. After rising significantly over the period 2009–10, as the government has been receiving front-loaded foreign financing to recover from major terms of trade shock, the debt outlook is expected to recover and improve over the medium term. Although the public DSA suggests that in light of the signing of the Oyu Tolgoi mining agreement domestic debt will rise in the medium term, it does not lead to a different sustainability assessment.

I. BACKGROUND

This joint DSA update incorporates the fiscal costs associated with banking sector restructuring and the recently signed Oyu Tolgoi mining agreement.[2] It assumes that Mongolia achieves sustainable growth by maintaining prudent macroeconomic and structural policies, including the establishment of a fiscal framework to avoid procyclical policies. Specifically, in light of plans under the draft fiscal stability law, the phasing out of donor

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[1] The DSA has been produced jointly by the staffs of the International Monetary Fund and the World Bank, in consultation with the Asian Development Bank (AsDB) and the Mongolian authorities (Debt Management Department and Aid Coordination Department of the Ministry of Finance). The fiscal year for Mongolia is January–December.

[2] The DSAs presented in this document are based on the common standard low-income countries (LIC) DSA framework. Under the Country Policy and Institutional Assessment (CPIA), Mongolia is rated as a medium performer with an average rating of 3.3 between 2006–08, and the DSA uses the indicative threshold indicators for countries in this category. See "Debt Sustainability in Low-Income Countries: Proposal for an Operational Framework and Policy Implications" (http://www.imf.org/external/np/pdr/sustain/2004/020304.htm and IDA/SECM2004/0035, 2/3/04) and "Debt Sustainability in Low-Income Countries: Further Considerations on an Operational Framework, Policy Implications" (http://www.imf.org/external/np/pdr/sustain/2004/091004.htm and IDA/SECM2004/0629, 9/10/04) and "Applying the Debt Sustainability Framework for Low-Income Countries Post Debt Relief," (8/11/06).

budgetary support, and a desire to not crowd out the private sector, the authorities continue with fiscal adjustment until revenues from the Oyu Tolgoi mine, net of amortization, start to hit the budget (around 2016). Good macroeconomic policies will also help avoiding "the resource curse."

Compared to the previous DSA the macroeconomic outlook has improved, supported by Mongolia's strong policy implementation under the SBA-supported program. Market conditions have improved and monetary policy has brought down inflation and rebuilt international reserves with comfortable margins relative to program floors. The growth profile has been updated in line with revised production estimates for the Oyu Tolgoi mine over the medium and long term (Box 1).

Box 1. Mongolia—The Oyu Tolgoi Mining Project

Oyu Tolgoi is the world's largest undeveloped copper-gold project and is located just north of the Mongolian-Chinese border. An investment agreement to develop the Oyu Tolgoi deposits was concluded in October 2009 between Rio Tinto International (a British-Australian mining company), Ivanhoe Mines Ltd (Canadian), Ivanhoe Mines Mongolia Inc LLC, and the Government of Mongolia.

A key aspect of the agreement is that the government will hold a 34 percent equity share in Ivanhoe Mines Mongolia Inc LLC, which is the license holder of the Oyu Tolgoi project. The government's participation is financed as a domestic but US$-denominated loan of around US$870 million from Ivanhoe Mines Mongolia, and along with advance payments of US$250 million for budget financing, becomes due for repayment from 2014 onwards. Other important terms include a stable operational and tax environment. Ivanhoe will retain a controlling 66 percent equity share in the Oyu Tolgoi project (with Rio Tinto currently owning a 22 percent share in Ivanhoe).

Ivanhoe-Rio Tinto is expected to spend US$758 million in 2010 to begin the full-scale construction of the mine and similarly large amounts are expected to be spent in the next few years. As mining-related imports increase, the current account deficit is accordingly expected to worsen significantly in the near term as mining-related imports increase. However, this will be mirrored by large capital inflows in the financial account. Production is projected to start in 2013 and is expected to produce 500,000 tons of copper and 500,000 ounces of gold per year on average for at least 35 years, with the life of the mine estimated at around 60 years. Revenues, that is, corporate income tax, royalties, VAT, and dividends, from Oyu Tolgoi are expected to enter the budget from 2016 onwards. However, only around 2016 will net revenues, that is, after amortization of the prepayment and equity share loans, enter the budget.

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Sources: Rio Tinto, IMF, and World Bank.

Mongolia's economic prospects also received a big boost with the signing of the Oyu Tolgoi investment agreement at the end of 2009. Growth, after bottoming out in 2009, is projected to rebound to 7 percent this year, driven largely by capital expenditures related to the Oyu Tolgoi mine. Even though much of the investment will be met through imports, there will be substantial spillovers to the domestic economy. In addition, copper prices have

rebounded and are projected to be significantly higher than projected in the previous joint DSA.[3] Other major mining projects are being explored which could further improve the outlook.[4]

Mongolia's stock of external debt as of end-2009 is estimated at US$2.1 billion (50 percent of GDP). This includes public or publicly guaranteed debt (PPG) of US$2.0 billion as reported by the Ministry of Finance and estimated private external debt of US$0.1 billion. Most of Mongolia's public debt is external with about 64 percent

Mongolia: Structure of External Public Debt			
	End-2009 Nominal		End-2009 Present Value
	USD mn	% of GDP	
Public debt	1,977	47.1	1,457
Multilaterals	1,253	29.8	883
IMF	182	4.3	166
World Bank	392	9.3	239
AsDB	627	14.9	447
Official bilaterals	650	15.5	494
Paris Club	508	12.1	380
Non-Paris Club	142	3.4	114
Commercial	75	1.8	80

Sources: Mongolian Ministry of Finance, AsDB, WB and IMF staff estimates.

of external debt contracted with multilateral creditors on concessional terms, 32 percent with official bilateral creditors on relatively concessional terms and 4 percent with commercial banks.

The recent increase in the external debt stock reflects donor financing, including Fund and Bank lending to help Mongolia smooth its fiscal adjustment path after the major terms of trade shock in 2008. Mongolia's external PPG debt burden rose to 47 percent of GDP in 2009 from 34 percent of GDP in 2008. The increase came after strong reductions in debt in previous years due to high rates of economic growth and prudent debt

Nominal External PPG Debt

% of GDP

87.3, 73.7, 59.7, 44.3, 38.9, 33.7, 47.1, 40.0

2003 2004 2005 2006 2007 2008 2009 2010P

Sources: Mongolian Ministry of Finance, AsDB, WB and IMF staff estimates.

management policies, which reduced its external PPG debt from 87 percent of GDP in 2003.

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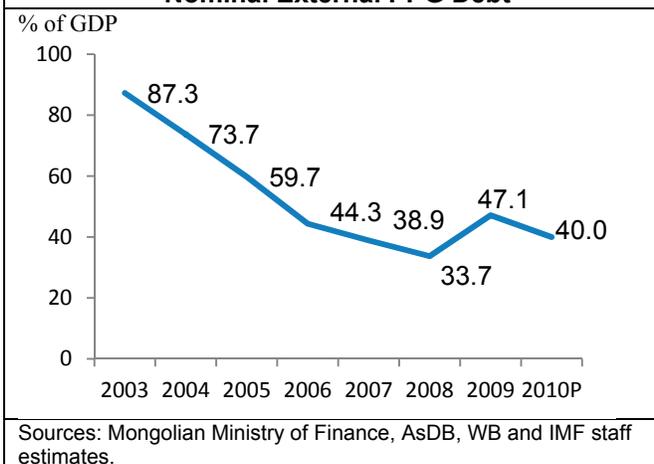
[3] See "Mongolia: Request for Stand-By Arrangement," April 2009 (IMF Country Report No. 09/130), and, IDA/R2009-0175/1 (World Bank).

[4] The Tavan Tolgoi deposit, close to the border with China, if developed, would make Mongolia a major world coal producer. However, the Tavan Tolgoi project has not been incorporated in the underlying baseline macroeconomic framework due to the uncertainties about its size and timeframe for development. Once Tavan Tolgoi materializes, it is projected to have an important short-term impact via increased equipment imports, FDI, and loan inflows, and a medium- to long-term beneficial impact on the current account, similar to Oyu Tolgoi.

The fiscal deficit, which will be financed primarily by domestic sources, is expected to steadily decline until revenues from the Oyu Tolgoi mine enter the budget.

The composition of domestic debt reflects the Oyu Tolgoi project and bank restructuring financing.[5] The Oyu Tolgoi loans have been contracted from a resident company in U.S. dollars. The banking restructuring bonds are domestic currency denominated and assumed to be repaid after 10 years for an amount of about Tog 520 billion.[6]

Mongolia's debt management capacity remains low, but progress has been made in some areas. The World Bank's 2008 Debt Management Performance Assessment (DeMPA) found that Mongolia scored poorly on indicators relating to operational risk management and cash flow forecasting and cash balance management. However, it noted its relatively better performance vis-à-vis strategy development, coordination with macroeconomic policies, recording and reporting, key elements considering the large up-front external borrowing in 2009 and 2010.[7] In addition, since that assessment, Mongolia has improved debt management procedures and has prepared a medium-term debt management strategy.[8]

II. UNDERLYING DSA ASSUMPTIONS

The baseline assumes a strong institutional framework and macroeconomic policies to minimize Dutch disease effects (Box 2). Following the surge in mining production from the Oyu Tolgoi mine, Mongolia will likely experience a substantial real appreciation creating challenges to maintaining low inflation and developing the nonmineral economy. The baseline assumes a restrained fiscal policy, supported by the adoption of a fiscal stability law.[9] The fiscal stability law will promote the needed budget discipline by constraining policymakers' discretion. The law would put in place three complementary rules that would function as a fiscal "circuit breaker" and would work together to ensure fiscal discipline: (i) a ceiling on the "structural" deficit, (ii) a debt ceiling, and (iii) a ceiling on expenditure growth. Finally, it assumes that structural fiscal reforms including pensions, civil service, and subsidy

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[5] However, roughly one-third of total domestic debt in 2009 is accounted for by short-term debt issued for budgetary financing.

[6] The Oyu Tolgoi investment share loan will be disbursed and repaid based on cash flow projections, which are subject to changes in commodity price assumptions.

[7] Conducted by the World Bank in June 2008.

[8] In 2009, the Debt Management Division of the Ministry of Finance (MoF) revised its previous debt management strategy, developing it as a medium-term strategy for 2010–12. This medium-term framework creates the opportunity for the government and MoF to improve future risk management.

[9] The fiscal stability law was submitted to parliament on January 12, 2010.

reforms will contribute to an improved business climate and overall competitiveness of the economy.

Box 2. Mongolia—Macroeconomic Assumptions

The baseline macroeconomic framework assumes that the economy will be underpinned by the investment in the Oyu Tolgoi mine. The construction and exploitation of the Oyu Tolgoi copper and gold mine are expected to lead to significant structural changes in the economy.

- The outlook for **real GDP growth** is dominated by the Oyu Tolgoi mine. The scaling up of mining will increase mineral GDP and will have significant second-round effects on other sectors through a reallocation of resources and changes in relative prices. After bottoming out at minus 1.6 percent, real GDP growth is expected to rebound to over 7 percent in 2010, boosted by Oyu Tolgoi-related capital expenditures. Once production from the Oyu Tolgoi mine starts in 2013, it will boost growth to over 25 percent. Real GDP growth is expected to average 10 percent over the medium term (2014–20), taking into account the impact on the nonmineral economy.

- The **copper price** projections through 2015 are based on the WEO projections as of February 19, 2010 and are assumed constant in real terms afterwards.

- Given the fiscal adjustment under the Fund-supported program, and a tightening of monetary policy, **inflation** is projected to converge to about 5 percent over the long term.

- The **balance of payments** will go through large swings. The current account will remain in deficit of around 17 percent of GDP between 2010 and 2012 due to large imports of mining-related investment goods. As the project comes on stream, the current account will jump into a surplus.

- After a period of consolidation, the **overall fiscal deficit** is expected to converge to a new equilibrium. **Fiscal revenues** will be boosted by the Oyu Tolgoi project and are expected to reach 30 percent of GDP in 2016 (or 60 percent of nonmineral GDP), gradually converging to 27 percent of GDP by 2030. The fiscal stability law will reduce pro-cyclicality by restraining **expenditure** growth during periods of high mineral revenues and enable the authorities to save a substantial fraction of mineral revenues. As a result, the overall balance would be in substantial surplus in 2014–20 and would then gradually converge to balance by 2030.

- **Private external debt, portfolio investment, and FDI** are expected to increase in line with the development of mining projects, which will substantially help to sustain growth and build international reserves.

The borrowing assumptions reflect Mongolia's move to middle-income status. As the mining projects come on stream, Mongolia is expected to become eligible for nonconcessional borrowing from both the IBRD and the AsDB, which would be phased in starting in 2013. After that point, the concessionality of new external borrowing—as reflected by the grant-equivalent financing component—is projected to decline from

37 percent in 2012 to 27 percent by 2030.[10] Interest rates reflect IDA blend terms and AsDB terms for concessional borrowing and market conditions for commercial loans (although present conditions on the international capital markets for low-rated, first-time issuers may not be favorable, see Box 3).

III. DEBT SUSTAINABILITY

A. External DSA

Mongolia is at low risk of debt distress. All debt indicators remain below the relevant thresholds.[11] Under the baseline, external debt indicators drop sharply in the near term, as the economy rebounds first due to Oyu Tolgoi-related investment spending and then supported by the production from the mine. The large loan repayments in 2013, in particular to the Fund, will reduce the debt stock, and debt ratios will stabilize thereafter. The present value (PV) of external public debt is forecasted to fall from 29 percent in 2010 to 13 percent of GDP at the end of the projection period.[12]

External public debt service remains manageable, despite the expected repayment clustering in 2012−14. The government has opportunistically built reserves over the past year, over performing relative to the floors in the Fund-supported program, and is expected to further increase its reserves. Debt service ratios rise sharply in 2013–14 as multilateral donors are repaid, but remain low compared to thresholds, and fall back to roughly half their levels in 2013 over the medium to long term. Nevertheless, it is important that in the near term Mongolia maintains a prudent fiscal stance, saves the advance prepayments from the Oyu Tolgoi project, and continues to opportunistically build reserves in order to ensure adequate liquidity over this period.

Stress tests do not indicate any breach of the relevant debt thresholds. Under the most extreme test—a one-time nominal depreciation of 30 percent relative to the baseline—the PV of debt-GDP ratio climbs 7 percentage points to 36 percent in 2011 but then falls back over the remainder of the projection period.

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[10] Mongolia's 2008 GNI per capita is already above the threshold to be potentially eligible for IBRD loans .

[11] The *Staff Guidance Note on the Application of the Joint Fund-Bank Debt Sustainability Framework for Low-Income Countries* defines a "low risk of debt distress" when: "All debt indicators are well below relevant country-specific debt-burden thresholds. Stress testing and country-specific alternative scenarios do not result in indicators significantly breaching thresholds. In case where only one indicator is above its benchmark, judgment is needed to determine whether there is a debt sustainability problem or some other issues.

[12] The debt burden thresholds for medium policy performer are 150, 40, and 250 for the PV of debt in percent of exports, GDP, and revenue, respectively. Under the same medium policy classification, thresholds for debt service are 20 percent and 30 percent of exports and revenue, respectively.

Box 3. Sovereign Bond Spreads in 2009

Emerging market bond spreads have fallen considerably since mid -2009 after widening to close to 800 basis points (bps) over U.S. treasuries last year, as concerns about large government contingent liabilities vis-à-vis potential bank recapitalizations eased and investor risk aversion declined. Although EMBI spreads are slightly above 300 bps, there are important differences between countries, notably those relating to sustainability of public finances, the likelihood of debt distress, and whether efforts at fiscal consolidation are credible.

Low- and middle-income country spreads have narrowed over the past year but still remain elevated for low-income countries

Basis points EMBI+ daily stripped spread over U.S. treasuries
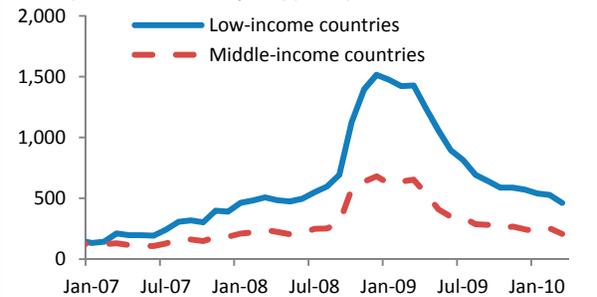
Note: Unweighted average of selected low- and middle-income countries. Source: J.P. Morgan Emerging Market Bond Index Plus, World Bank

Emerging market economies issued a total of US$35 billion of sovereign bonds in the first 10 months of 2009. However the cost of borrowing varied considerably. For example, for countries with a relatively high investment grade rating (S&P rating of A, BBB+ and BBB) bond spreads were some 300 bps higher relative to the government benchmark rate and 280 bps above the London Interbank Offer Rate (LIBOR). In comparison, countries rated less favorably (S&P rating of BBB-) were higher (see table below). Spreads for Indonesia, which has a sub-investment grade rating (BB-), were more than 800 basis points higher than either the government or the LIBOR benchmarks.[1]

Sovereign Bond Issues in 2009 by Selected Countries

Country	S&P rating	Moody's rating	Coupon rate	Maturity	US$ (mn)	Spread (bps) over Government Benchmark	LIBOR
Columbia	BBB-	Ba1	7.4	10	1,000	503	465
Peru	BBB-	Ba1	7.2	10-15	1,500	391	371
Brazil	BBB-	Ba1	6.1	10-30	3,525	248	243
Indonesia	BB-	Ba3	11.0	5-10	3,000	865	829
Philippines	NA	B1	8.4	10	1,500	600	575
Sri Lanka	B	not rated	7.4	5	500	506	468

Source: World Bank staff.

This shows that the market conditions remain very difficult for low-rated sovereigns. Indeed sovereign bond spreads have surged again and market appetite for sovereign bonds from such countries decreased in recent months, first due to the debt standstill by Dubai World, a state backed property venture in Dubai, and now most recently on account of solvency fears about Greece as well as other developed economies such as Portugal and Spain, with large fiscal deficits and rising debt ratios. This suggests that a first-time issuer in financial difficulties may also find it quite costly to enter the market at this stage.

[1] Although Mongolia has no outstanding international bonds, parliament has authorized the government to issue up to US$1.2 billion. Fitch ratings currently assigns a notional B rating (sub-investment grade) to Mongolia's long-term external debt with a stable outlook, which is an improvement compared to early 2009, when it had a negative outlook. Other sovereigns with a similar rating include Ecuador, Ghana, Lebanon, Sri Lanka, Ukraine, and Venezuela.

The historical scenario is not applicable to Mongolia with key variables at their historical averages throughout the projection period as the country is undergoing a major structural shift as real GDP growth is expected to jump from 6 percent in 2012 to 28 percent in 2013.

B. Public DSA

Public debt has increased substantially compared to the previous DSA due to the domestic financing of the Oyu Tolgoi project and banking restructuring costs. The baseline includes (i) fiscalization of banking sector restructuring costs through domestic bond issuances, and (ii) loans to the government from the local mining company for financing the government's investment share and a prepayment on future revenues.

The government has contracted borrowing agreements with the domestic counterpart of the mining conglomerate. The government will borrow US$50 million for budget financing in 2010 after US$100 million were disbursed in 2009, and an additional US$100 million in 2011. An estimated additional US$870 million will be borrowed to finance the government's 34 percent investment share in the project. As both loans will be contracted from a resident company, their impact is reflected in the public DSA.

As a result, public sector domestic debt service ratios are projected to increase sharply during 2014–17 as these loans are being repaid. The advance payment loans will be repaid from the general budget, while government's investment share borrowing will be repaid from accrued dividends (the government will not be liable for the loan in the unlikely event that dividends are insufficient).

The authorities are developing a comprehensive bank restructuring plan, with technical assistance provided by Bank and Fund staff. Costs associated with the restructuring are assumed to be fiscalized through the issuance of government bonds at an estimated 8 percent of GDP by 2010.

The risks for fiscal sustainability have increased over the medium term but remain low.[13] The government will receive dividends from its share in the Oyu Tolgoi mine and government deposits are expected to increase, providing a comfortable cushion. For these reasons fixing the primary balance permanently at the 2010 deficit of 3 percent of GDP cannot be considered a realistic worst-case scenario for Mongolia. The permanent growth shock scenario is unrealistic given Mongolia's mining prospects, both in the investment phase and the operational phase of the Oyu Tolgoi project.

The high-investment-low-growth scenario is not relevant for Mongolia. The increase in public debt related to the Oyu Tolgoi project does not have an impact on investment and

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[13] The public DSA is conservatively undertaken on a gross debt rather than on a net debt basis.

growth. The investment and production at the Oyu Tolgoi mine and, therefore, the economy's projected growth path do not depend on the government's participation. Once the mine starts production, the mining volume is virtually irresponsive to price changes. The impact of lower-than-projected growth is covered in the growth shock and alternative lower growth scenario.

IV. AUTHORITIES' VIEW

The authorities concurred with the overall assessment. They acknowledged that the bridging to the start of the Oyu Tolgoi mining in 2013 will be key, and that fiscal consolidation will be needed. They recognized that high public debt makes the economy vulnerable to commodity price changes, or financing constraints and that a debt ceiling rule could prevent excessive borrowing against future wealth and reinforce the government's commitment to fiscal sustainability. Finally, they agreed with the assessment of the risk posed to Mongolia's debt outlook from contracting large amounts of commercial external debt to finance the budget.

V. CONCLUSIONS

The overall assessment has not changed since the last DSA and the external DSA indicates that Mongolia remains at low risk of external debt distress. The short-term macroeconomic outlook has improved due to strong performance under the SBA and a more favorable global outlook than envisaged at the outset of the program. The increase in domestic debt, albeit from a low level, does not lead to a different sustainability assessment that under the external DSA. Consequently, Mongolia would benefit from fiscal discipline until a sustainable flow of mineral revenues is established along with prudent nonconcessional borrowing consistent with debt sustainability, and sensible debt management.

Figure 1. Mongolia: Indicators of Public and Publicly Guaranteed
External Debt Under Alternatives Scenarios, 2010-30 1/
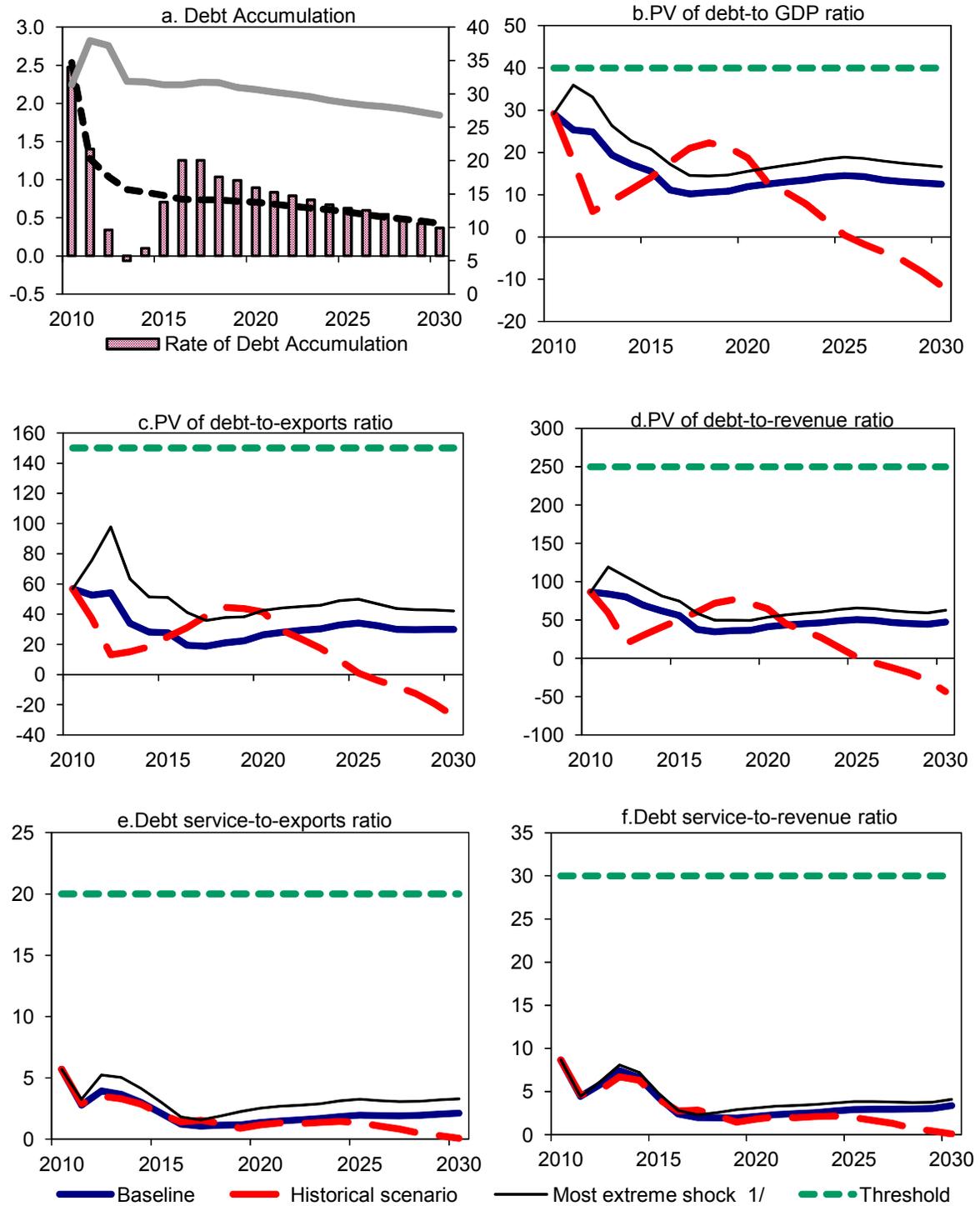
a. Debt Accumulation

b.PV of debt-to GDP ratio

c.PV of debt-to-exports ratio

d.PV of debt-to-revenue ratio

e.Debt service-to-exports ratio

f.Debt service-to-revenue ratio

Baseline — Historical scenario — Most extreme shock 1/ — Threshold

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

1/ The most extreme stress test is the test that yields the highest ratio in 2020. 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 f, to a exports shock.

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

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

1/ The most extreme stress test is the test that yields the highest ratio in 2020 (growth).

2/ Revenues are defined inclusive of grants.

Table 1. Mongolia: External Debt Sustainability Framework, Baseline Scenario, 2007-30 1/

(In percent of GDP, unless otherwise indicated)

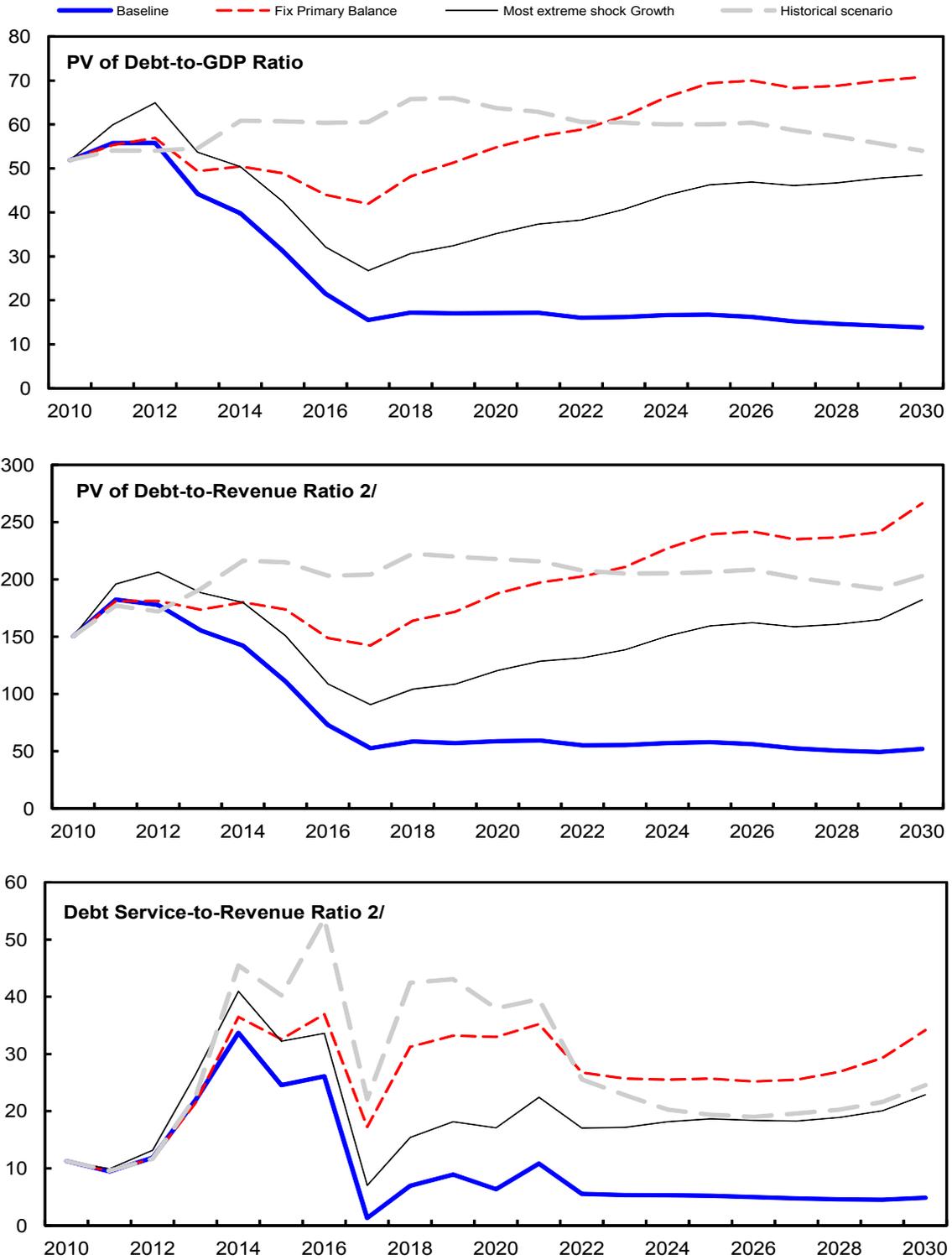|	Actual			Historical 6/ Average	Standard 6/ Deviation	Projections						2010-15 Average	2020	2030	2016-30 Average
	2007	2008	2009			2010	2011	2012	2013	2014	2015				
External debt (nominal) 1/	**40.1**	**34.6**	**50.0**			**52.7**	**60.4**	**79.2**	**60.1**	**46.3**	**36.8**		**17.9**	**16.2**	
Of which: public and publicly guaranteed (PPG)	38.9	33.7	47.1			40.0	34.6	33.9	26.6	23.7	21.4		16.0	15.9	
Change in external debt	-5.0	-5.5	15.4			2.7	7.7	18.8	-19.1	-13.8	-9.5		0.6	-0.5	
Identified net debt-creating flows	-24.8	-11.7	3.3			-0.2	4.2	4.8	-25.4	-18.0	-14.5		-4.0	-0.3	
Noninterest current account deficit	**-7.1**	**13.7**	**5.1**	**2.6**	**7.2**	**10.4**	**20.6**	**17.7**	**-1.3**	**-6.3**	**-6.3**		**-3.5**	**1.0**	**-3.1**
Deficit in balance of goods and services	-2.7	15.6	6.8			11.8	23.5	19.6	-9.1	-16.1	-12.5		-7.6	-0.6	
Exports	64.2	58.3	55.3			51.3	48.2	45.9	57.1	61.1	56.3		45.1	41.8	
Imports	61.5	73.9	62.1			63.2	71.7	65.4	48.0	45.0	43.8		37.5	41.2	
Net current transfers (negative = inflow)	-5.5	-3.5	-3.8	-8.3	3.3	-2.9	-2.3	-2.3	-1.7	-1.4	-1.2		-0.6	-0.6	-0.6
Of which: official	-3.4	-1.7	-0.9			-0.6	-0.4	-0.3	-0.2	-0.2	-0.1		0.0	0.0	
Other current account flows (negative = net inflow)	1.1	1.6	2.2			1.5	-0.5	0.5	9.5	11.3	7.4		4.6	2.2	
Net FDI (negative = inflow)	**-9.2**	**-16.2**	**-10.1**	**-8.6**	**3.7**	**-8.2**	**-13.7**	**-10.0**	**-10.0**	**-5.0**	**-5.0**		**-1.0**	**-1.0**	**-1.5**
Endogenous debt dynamics 2/	**-8.5**	**-9.1**	**8.3**			**-2.4**	**-2.7**	**-3.0**	**-14.2**	**-6.7**	**-3.2**		**0.5**	**-0.3**	
Contribution from nominal interest rate	0.4	0.3	0.5			0.6	0.4	0.4	3.5	2.9	2.0		0.4	0.2	
Contribution from real GDP growth	-3.7	-2.7	0.7			-3.0	-3.1	-3.3	-17.7	-9.6	-5.2		0.1	-0.5	
Contribution from price and exchange rate changes	-5.2	-6.8	7.1			…	…	…	…	…	…		…	…	
Residual (3-4) 3/	19.8	6.2	12.1			2.9	3.5	14.0	6.3	4.2	5.0		4.6	-0.2	
Of which: exceptional financing	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
PV of external debt 4/	…	…	37.6			41.9	51.2	70.1	52.9	39.8	30.9		13.8	12.8	
In percent of exports	…	…	68.0			81.6	106.1	152.9	92.6	65.0	54.9		30.5	30.6	
PV of PPG external debt	**...**	**...**	**34.7**			**29.1**	**25.3**	**24.8**	**19.4**	**17.2**	**15.6**		**11.9**	**12.5**	
In percent of exports	**...**	**...**	**62.8**			**56.8**	**52.6**	**54.2**	**34.0**	**28.1**	**27.7**		**26.4**	**29.9**	
In percent of government revenues	**...**	**...**	**106.8**			**86.5**	**83.9**	**80.0**	**68.9**	**61.9**	**55.8**		**41.2**	**47.2**	
Debt service-to-exports ratio (in percent)	4.3	2.8	3.7			5.7	2.8	3.9	14.1	17.4	13.3		3.4	2.1	
PPG debt service-to-exports ratio (in percent)	**2.0**	**2.0**	**3.7**			**5.7**	**2.8**	**3.9**	**3.7**	**3.0**	**2.1**		**1.4**	**2.1**	
PPG debt service-to-revenue ratio (in percent)	**3.2**	**3.3**	**6.3**			**8.7**	**4.5**	**5.8**	**7.4**	**6.6**	**4.3**		**2.1**	**3.4**	
Total gross financing need (millions of U.S. dollars)	-531.9	-45.9	-103.1			283.0	553.4	707.1	-207.3	6.6	-349.7		-605.3	421.6	
Noninterest current account deficit that stabilizes debt ratio	-2.1	19.2	-10.2			7.7	12.9	-1.0	17.8	7.5	3.2		-4.1	1.5	
Key macroeconomic assumptions															
Real GDP growth (in percent)	10.2	8.9	-1.6	6.0	4.1	7.3	7.1	6.1	27.9	18.6	12.8	13.3	-0.8	3.4	5.1
GDP deflator in U.S. dollar terms (change in percent)	13.0	20.3	-17.0	9.3	12.0	14.3	12.4	3.7	-2.3	-1.8	0.6	4.5	3.0	2.1	2.7
Effective interest rate (percent) 5/	1.1	1.1	1.2	1.6	0.6	1.5	0.8	0.7	5.5	5.6	5.0	3.2	2.2	1.5	2.0
Growth of exports of G&S (U.S. dollar terms, in percent)	24.2	18.9	-22.5	17.2	20.4	13.8	13.0	4.8	55.6	24.6	4.6	19.4	-5.1	3.1	6.0
Growth of imports of G&S (U.S. dollar terms, in percent)	28.5	57.4	-31.4	16.6	22.3	24.7	36.5	0.5	-8.3	9.1	10.6	12.2	2.0	7.4	7.4
Grant element of new public sector borrowing (in percent)	…	…	…	…	…	31.4	38.0	37.3	31.9	31.8	31.4	33.6	30.7	26.8	29.5
Government revenues (excluding grants, in percent of GDP)	40.4	35.8	32.5			33.7	30.2	31.1	28.2	27.8	27.9		28.9	26.4	28.8
Aid flows (in millions of U.S. dollars) 7/	18.8	13.8	17.0			41.9	22.0	24.4	24.4	25.2	26.3		54.6	51.3	
Of which: Grants	18.8	13.8	17.0			41.9	22.0	24.4	24.4	25.2	26.3		54.6	51.3	
Of which: Concessional loans	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Grant-equivalent financing (in percent of GDP) 8/	…	…	…			2.5	1.3	1.0	0.9	0.8	0.8		0.7	0.4	0.6
Grant-equivalent financing (in percent of external financing) 8/	…	…	…			40.2	45.9	47.5	41.1	40.1	39.3		39.9	36.0	38.5
Memorandum items:															
Nominal dollar GDP growth	24.5	31.0	-18.4			22.6	20.3	10.0	24.9	16.5	13.5	18.0	2.2	5.6	8.1
PV of PPG external debt (in millions of U.S. dollars)			1457.3			1561.4	1633.5	1654.5	1649.9	1658.3	1728.4		2664.7	4235.8	
(PVt-PVt-1)/GDPt-1 (in percent)						2.5	1.4	0.3	-0.1	0.1	0.7	0.8	0.9	0.4	0.8
Gross remittances (Millions of US dollars)	83.9	94.2	120.5			120.5	121.1	121.7	122.3	122.9	123.5		138.0	195.7	
PV of PPG external debt (in percent of GDP + remittances)	…	…	33.8			28.5	24.9	24.4	19.1	17.0	15.4		11.8	12.4	
PV of PPG external debt (in percent of exports + remittances)	…	…	59.7			54.3	50.6	52.1	33.1	27.6	27.1		26.1	29.5	
Debt service of PPG external debt (in percent of exports + remittances)	…	…	3.5			5.5	2.7	3.8	3.6	3.0	2.1		1.3	2.1	

Sources: Mongolian authorities; and IMF 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. Mongolia: Public Sector Debt Sustainability Framework, Baseline Scenario, 2007-30
(In percent of GDP, unless otherwise indicated)

	Actual			Average 5/	Standard Deviation 5/	Estimate	Projections						2010-15 Average			2016-30 Average
	2007	2008	2009			2010	2011	2012	2013	2014	2015		2020	2030	
Public sector debt 1/	39.4	33.8	56.4			62.7	65.0	64.9	51.4	46.3	37.1		21.2	17.2	
Of which: foreign-currency denominated	38.9	33.7	49.5			51.9	53.6	52.8	40.9	36.0	28.3		16.0	15.9	
Change in public sector debt	-5.0	-5.6	22.6			6.3	2.3	-0.1	-13.5	-5.1	-9.3		0.4	-0.6	
Identified debt-creating flows	-11.7	-2.0	9.4			-0.9	-5.7	-0.6	-13.0	-8.8	-11.6		0.0	-1.5	
Primary deficit	-3.3	4.6	5.0	0.6	4.4	2.7	3.2	0.8	-2.2	-4.5	-7.0	-1.2	-0.5	-0.8	-1.9
Revenue and grants	40.9	36.1	32.9			34.5	30.6	31.4	28.4	28.0	28.1		29.2	26.6	
Of which: grants	0.5	0.3	0.4			0.8	0.4	0.4	0.3	0.3	0.2		0.2	0.1	
Primary (noninterest) expenditure	37.6	40.6	37.9			37.2	33.7	32.3	26.2	23.5	21.2		28.6	25.8	
Automatic debt dynamics	-8.0	-6.4	4.9			-10.5	-8.6	-1.3	-10.6	-4.2	-4.5		0.6	-0.6	
Contribution from interest rate/growth differential	-8.4	-8.9	8.1			-8.9	-8.6	-4.4	-9.7	-5.1	-4.1		0.0	-0.6	
Of which: contribution from average real interest rate	-4.2	-5.7	7.5			-5.0	-4.5	-0.7	4.5	2.9	1.2		-0.2	0.0	
Of which: contribution from real GDP growth	-4.1	-3.2	0.6			-3.8	-4.2	-3.7	-14.2	-8.1	-5.3		0.2	-0.6	
Contribution from real exchange rate depreciation	0.4	2.5	-3.2			-1.6	0.0	3.2	-1.0	1.0	-0.4		...	...	
Other identified debt-creating flows	-0.4	-0.1	-0.4			6.9	-0.2	-0.2	-0.2	-0.1	-0.1		-0.1	0.0	
Privatization receipts (negative)	-0.4	-0.1	-0.4			-0.3	-0.2	-0.2	-0.2	-0.1	-0.1		-0.1	0.0	
Recognition of implicit or contingent liabilities	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Debt relief (HIPC and other)	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Other (bank recapitalization)	0.0	0.0	0.0			7.2	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Residual, including asset changes	6.7	-3.6	13.2			7.2	8.0	0.5	-0.5	3.7	2.3		0.4	0.8	
Other Sustainability Indicators															
PV of public sector debt	0.5	0.0	44.0			51.9	55.8	55.8	44.2	39.8	31.2		17.1	13.8	
Of which: foreign-currency denominated	0.0	0.0	37.1			41.1	44.3	43.7	33.7	29.5	22.5		11.9	12.5	
Of which: external	...	...	34.7			29.1	25.3	24.8	19.4	17.2	15.6		11.9	12.5	
PV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...	
Gross financing need 2/	-1.1	6.5	7.1			9.1	6.1	4.6	4.0	4.9	-0.1		1.3	0.5	
PV of public sector debt-to-revenue and grants ratio (in percent)	1.2	0.1	133.7			150.3	182.5	177.8	155.4	142.1	110.9		58.6	52.0	
PV of public sector debt-to-revenue ratio (in percent)	1.2	0.1	135.3			153.9	184.6	179.8	157.0	143.4	111.9		59.1	52.3	
Of which: external 3/	...	...	106.8			86.5	83.9	80.0	68.9	61.9	55.8		41.2	47.2	
Debt service-to-revenue and grants ratio (in percent) 4/	5.5	4.5	6.4			11.3	9.5	11.9	21.9	33.7	24.6		6.4	4.9	
Debt service-to-revenue ratio (in percent) 4/	5.5	4.5	6.5			11.6	9.6	12.0	22.2	34.0	24.8		6.4	4.9	
Primary deficit that stabilizes the debt-to-GDP ratio	1.7	10.2	-17.7			-3.7	0.9	1.0	11.3	0.6	2.3		-0.9	-0.2	
Key macroeconomic and fiscal assumptions															
Real GDP growth (in percent)	10.2	8.9	-1.6	6.0	4.1	7.3	7.1	6.1	27.9	18.6	12.8	13.3	-0.8	3.4	5.1
Average nominal interest rate on forex debt (in percent)	1.1	1.1	1.2	1.7	0.6	1.5	0.8	0.7	6.3	4.5	3.1	2.8	1.3	1.5	1.4
Average real interest rate on domestic debt (in percent)	...	-4.6	80.3	17.1	29.0	1.7	5.0	7.0	9.2	8.0	4.3	5.9	1.3	4.5	4.7
Real exchange rate depreciation (in percent, + indicates depreciation)	1.0	8.4	-7.6	-0.3	4.0	...	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	12.3	20.2	2.2	12.6	7.3	11.2	4.2	2.3	0.3	1.4	5.1	4.1	7.3	5.3	4.8
Growth of real primary spending (deflated by GDP deflator, in percent)	0.5	0.2	-0.1	0.1	0.2	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	-0.1	0.1
Grant element of new external borrowing (in percent)	...	...	...	...	...	31.4	38.0	37.3	31.9	31.8	31.4	33.6	30.7	26.8	...

Sources: Mongolian authorities; and IMF staff estimates and projections.
1/ General government, on a 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.

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Table 3a. Mongolia: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2010-30
(In percent)

				Projections				
	2010	2011	2012	2013	2014	2015	**2020**	2030

PV of debt-to GDP ratio

Baseline	29	25	25	19	17	16	**12**	12

A. Alternative Scenarios

A1. Key variables at their historical averages in 2010-30 1/	29	18	6	9	11	14	**19**	-12
A2. New public sector loans on less favorable terms in 2010-30 2	29	27	25	21	18	17	**15**	18
A3. High-investment, low-growth scenario	29	25	25	30	38	36	**28**	14

B. Bound Tests

B1. Real GDP growth at historical average minus one standard deviation in 2011-12	29	28	27	21	18	17	**12**	13
B2. Export value growth at historical average minus one standard deviation in 2011-12 3/	29	31	36	29	25	23	**15**	14
B3. U.S. dollar GDP deflator at historical average minus one standard deviation in 2011-12	29	30	30	24	20	19	**14**	15
B4. Net nondebt creating flows at historical average minus one standard deviation in 2011-12 4/	29	31	30	24	21	19	**13**	13
B5. Combination of B1-B4 using one-half standard deviation shocks	29	35	35	28	24	22	**15**	15
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	29	36	33	26	23	21	**16**	17

PV of debt-to-exports ratio

Baseline	57	53	54	34	28	28	**26**	30

A. Alternative Scenarios

A1. Key variables at their historical averages in 2010-30 1/	57	37	13	15	18	25	**41**	-28
A2. New public sector loans on less favorable terms in 2010-30 2	57	56	55	36	30	31	**32**	44
A3. High-investment, low-growth scenario	57	53	55	65	79	74	**63**	34

B. Bound Tests

B1. Real GDP growth at historical average minus one standard deviation in 2011-12	57	55	53	34	27	27	**25**	29
B2. Export value growth at historical average minus one standard deviation in 2011-12 3/	57	76	98	63	51	51	**43**	42
B3. U.S. dollar GDP deflator at historical average minus one standard deviation in 2011-12	57	55	53	34	27	27	**25**	29
B4. Net nondebt creating flows at historical average minus one standard deviation in 2011-12 4/	57	64	66	42	34	34	**30**	31
B5. Combination of B1-B4 using one-half standard deviation shocks	57	68	68	44	35	35	**31**	32
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	57	55	53	34	27	27	**25**	29

PV of debt-to-revenue ratio

Baseline	86	84	80	69	62	56	**41**	47

A. Alternative Scenarios

A1. Key variables at their historical averages in 2010-30 1/	86	59	19	31	41	50	**65**	-44
A2. New public sector loans on less favorable terms in 2010-30 2/	86	89	82	74	66	62	**50**	69
A3. High-investment, low-growth scenario	86	84	82	95	112	103	**56**	31

B. Bound Tests

B1. Real GDP growth at historical average minus one standard deviation in 2011-12	86	92	85	75	65	60	**43**	50
B2. Export value growth at historical average minus one standard deviation in 2011-12 3/	86	103	114	102	90	82	**52**	53
B3. U.S. dollar GDP deflator at historical average minus one standard deviation in 2011-12	86	101	96	84	74	67	**49**	57
B4. Net nondebt creating flows at historical average minus one standard deviation in 2011-12 4/	86	102	97	86	75	69	**46**	49
B5. Combination of B1-B4 using one-half standard deviation shocks	86	115	112	99	87	79	**53**	57
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	86	119	107	94	82	74	**54**	63

Table 3b. Mongolia: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2010-30 (continued)
(In percent)

	2010	2011	2012	2013	2014	2015	2020	2030
				Projections				

Debt service-to-exports ratio

	2010	2011	2012	2013	2014	2015	2020	2030
Baseline	6	3	4	4	3	2	**1**	2
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2010-30 1/	6	3	3	3	3	2	**1**	0
A2. New public sector loans on less favorable terms in 2010-30 2/	6	3	4	4	2	2	**2**	3
A3. High-investment, low-growth scenario	6	3	4	5	5	4	**3**	4
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2011-12	6	3	4	4	3	2	**1**	2
B2. Export value growth at historical average minus one standard deviation in 2011-12 3/	6	3	5	5	4	3	**3**	3
B3. U.S. dollar GDP deflator at historical average minus one standard deviation in 2011-12	6	3	4	4	3	2	**1**	2
B4. Net nondebt creating flows at historical average minus one standard deviation in 2011-12 4/	6	3	4	4	3	2	**2**	2
B5. Combination of B1-B4 using one-half standard deviation shocks	6	3	4	4	3	2	**2**	2
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	6	3	4	4	3	2	**1**	2

Debt service-to-revenue ratio

	2010	2011	2012	2013	2014	2015	2020	2030
Baseline	9	4	6	7	7	4	**2**	3
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2010-30 1/	9	5	5	7	6	4	**2**	0
A2. New public sector loans on less favorable terms in 2010-30 2/	9	4	6	7	5	3	**3**	5
A3. High-investment, low-growth scenario	9	4	6	7	7	5	**2**	3
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2011-12	9	5	6	8	7	5	**2**	4
B2. Export value growth at historical average minus one standard deviation in 2011-12 3/	9	4	6	8	7	5	**3**	4
B3. U.S. dollar GDP deflator at historical average minus one standard deviation in 2011-12	9	5	7	9	8	5	**3**	4
B4. Net nondebt creating flows at historical average minus one standard deviation in 2011-12 4/	9	4	6	8	7	5	**3**	4
B5. Combination of B1-B4 using one-half standard deviation shocks	9	5	7	9	8	5	**3**	4
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	9	6	8	10	9	6	**3**	5
Memorandum item:								
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	30	30	30	30	30	30	**30**	30

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

1/ Variables include real GDP growth, growth of GDP deflator (in U.S. dollar terms), noninterest current account in percent of GDP, and nondebt creating flows.
2/ Assumes that the interest rate on new borrowing is by 2 percentage points higher than in the baseline, while grace and maturity periods are the same as in the baseline.
3/ Exports values are assumed to remain permanently at the lower level, but the current account as a share of GDP is assumed to return to its baseline level after the shock (implicitly assuming an offsetting adjustment in import levels).
4/ Includes official and private transfers and FDI.
5/ Depreciation is defined as percentage decline in dollar/local currency rate, such that it never exceeds 100 percent.
6/ Applies to all stress scenarios except for A2 (less favorable financing) in which the terms on all new financing are as specified in footnote 2.

Table 4. Mongolia: Sensitivity Analysis for Key Indicators of Public Debt 2010-30

				Projections				
	2010	2011	2012	2013	2014	2015	2020	2030
PV of Debt-to-GDP Ratio								
Baseline	52	56	56	44	40	31	17	14
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	52	54	54	55	61	61	64	54
A2. Primary balance is unchanged from 2010	52	55	57	49	50	49	55	71
A3. Permanently lower GDP growth 1/	52	56	57	46	43	35	28	55
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2011-12	52	60	65	54	50	42	35	48
B2. Primary balance is at historical average minus one standard deviations in 2011-12	52	57	61	48	43	34	19	15
B3. Combination of B1-B2 using one half standard deviation shocks	52	57	60	49	45	37	27	33
B4. One-time 30 percent real depreciation in 2011	52	69	69	55	50	40	21	19
B5. 10 percent of GDP increase in other debt-creating flows in 2011	52	64	64	51	46	36	20	16
PV of Debt-to-Revenue Ratio 2/								
Baseline	150	182	178	155	142	111	59	52
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	150	177	172	192	216	215	218	203
A2. Primary balance is unchanged from 2010	150	181	181	173	180	174	188	266
A3. Permanently lower GDP growth 1/	150	185	183	163	153	124	97	208
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2011-12	150	196	206	189	180	151	120	182
B2. Primary balance is at historical average minus one standard deviations in 2011-12	150	188	194	170	155	122	65	58
B3. Combination of B1-B2 using one half standard deviation shocks	150	187	191	171	161	131	92	122
B4. One-time 30 percent real depreciation in 2011	150	226	219	194	179	144	74	72
B5. 10 percent of GDP increase in other debt-creating flows in 2011	150	182	179	181	192	158	74	36
Debt Service-to-Revenue Ratio 2/								
Baseline	11	9	12	22	34	25	6	5
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	11	10	12	22	45	40	38	25
A2. Primary balance is unchanged from 2010	11	9	12	21	36	33	33	34
A3. Permanently lower GDP growth 1/	11	10	12	23	36	27	13	27
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2011-12	11	10	13	26	41	32	17	23
B2. Primary balance is at historical average minus one standard deviations in 2011-12	11	9	12	25	39	26	7	6
B3. Combination of B1-B2 using one half standard deviation shocks	11	10	12	23	38	28	12	15
B4. One-time 30 percent real depreciation in 2011	11	10	14	28	39	30	9	9
B5. 10 percent of GDP increase in other debt-creating flows in 2011	11	9	13	35	35	30	7	7

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