INTERNATIONAL MONETARY FUND AND
INTERNATIONAL DEVELOPMENT ASSOCIATION

MALDIVES

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

Prepared by the staffs of the International Monetary Fund and
the International Development Association

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*Based on the low-income country debt sustainability analysis (LIC DSA), Maldives' is rated to
be at a moderate risk of debt distress. Vulnerabilities for total public debt are higher, and
addressing them will require timely implementation of the authorities' strong fiscal adjustment
program. The borrowing space in the short and medium terms has shrunk after the recent
accumulation of large fiscal and external deficits. The build-up of private external debt prior to
the onset of the global financial crisis and of public domestic debt (mainly owed to the Maldives
Monetary Authority, MMA) in the last two years has intensified the debt burden. Key risks for
debt sustainability are large future shocks to exports or fiscal policy slippages. Satisfactory
implementation of the fiscal adjustment proposed under the program would lead to a sustained
downward path in the public and external debt stocks.* [2]

I. THE DEBT PORTFOLIO

1.   **The total debt to GDP ratio has increased fast since 2004, and reached almost
110 percent of GDP in 2008** [3]**.** Each major category of debt has shown strong growth rates
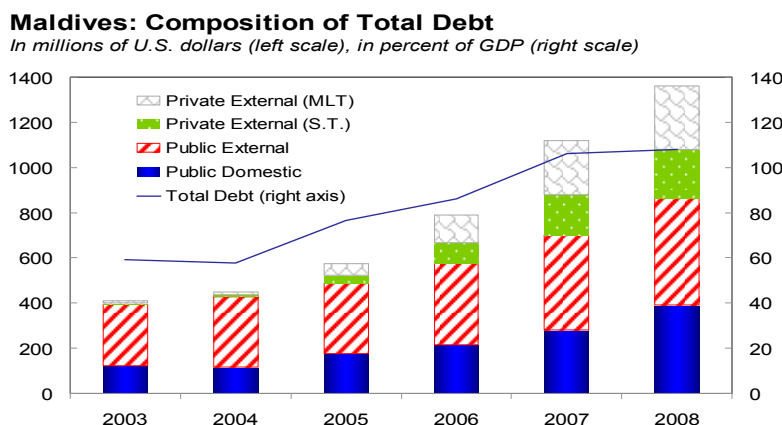following the 2004 tsunami. Growth in private external debt, used to finance a rapidly expanding

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[1] This DSA was prepared jointly by the staffs of the IMF and the World Bank. The staffs also consulted with the
Asian Development Bank. The debt data underlying this exercise were provided by the Maldivian authorities. The
fiscal year for Maldives is January-December.

[2] Maldives' policies and institutions, as measured by the World Bank's Country Policy and Institutional Assessment
(CPIA), averaged 3.53 over the past three years (2006-2008), placing it as a "medium performer." The relevant
indicative thresholds for this category are: 40 percent for the NPV of debt-to-GDP ratio, 150 percent for the NPV of
debt-to-exports ratio, 250 percent for the NPV 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 (PPG) external debt.

[3] In this section, total debt refers to total PPG debt (external and domestic) and private external debt.

tourism sector, has been particularly fast. An increasing fiscal deficit in the last two years has also led to a build up of public debt, much of it domestic. With external financing sources limited for much of 2009 and a fiscal deficit running close to 30 percent of GDP, a further build-up of domestic debt has been observed so far this year, which largely explains the projected increase in the total debt-to-GDP ratio to about 129 percent in 2009.

Maldives: Composition of Total Debt
In millions of U.S. dollars (left scale), in percent of GDP (right scale)

2.   **Public external debt rose rapidly after the 2004 tsunami**, as donor funds flowed into the country for reconstruction needs. It reached US$472 million (37½ percent of GDP) in 2008. About 70 percent (or one third of the total debt stock) is from multilateral and bilateral creditors. This fact, and the assumption that new borrowing is expected to be contracted from multilateral and bilateral creditors throughout the projection period, motivates the use of the low-income country (LIC) framework for the DSA.[4]

II.   MACROECONOMIC ASSUMPTIONS

3.   **Maldives is facing severe fiscal and external imbalances.** For the first three years after the 2004 tsunami disaster, the authorities pursued a growth strategy based on infrastructure spending and expansion of tourism, financed by both official grants and loans and private sector foreign borrowing. However, the global economic downturn has had a significant negative impact on export and tourism receipts, as well as government revenue. Moreover, private sector financing has contracted sharply. Combined with excessive government spending, this has led to a growing fiscal deficit, much of which has been monetized by the central bank. To address these challenges, the Government of Maldives has adopted a package of economic policy measures as described in their Memorandum of Economic and Financial Policies (MEFP). The DSA that follows builds on the program baseline scenario (Box 1).

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[4] This is the first DSA for Maldives that uses the LIC framework. Previous DSAs were conducted using the template designed for Middle-Income Countries (MICs). Thus, no debt distress rating was previously assigned. Although a comparison of ratings is therefore not possible, a qualitative comparison with the last DSA (IMF Country Report No. 09/97) suggests that the risk of debt distress has increased.

Box 1: Main Assumptions for the Debt Sustainability Analysis (2009-2029)

- **Real GDP growth** in 2009-14 is projected to average 2½ percent a year compared with an average of 7¼ percent over the previous five years. Negative growth in 2009, projected at -4 percent, is mainly due to reduced activity in the tourism sector, which has been adversely affected by global economic downturn. Growth is expected to recover thereafter to around 4½ percent, as global and domestic conditions improve, but to remain below the recent historical average. This assumes that resort development takes place at a more sustainable pace than that observed since the tsunami, and that supply constraints will hold back the fisheries sector.

- **Inflation** (which drives the GDP deflator) is projected to average 4¼ percent a year in 2009-14, compared with an average of 6½ percent over the previous five years, thanks to a moderation of global prices and the fiscal adjustment effort. Inflation is expected to stay at 3 percent thereafter, in line with trading partners' rates, reflecting continued fiscal consolidation and a tighter monetary policy.

- **Interest rates** on public debt are assumed to increase to 4½ percent by 2011 (compared with an average of 3¼ percent over the previous five years), reflecting a tighter domestic liquidity. They are assumed to decline thereafter.

- **The external current account deficit** (including grants) in 2009-14 is projected to average 15½ percent of GDP a year and decline to 5 percent by 2019 reflecting a significant fiscal retrenchment, compared to 51½ percent in 2008. Thereafter, it would remain at below its pre-tsunami level (2003).

- **The overall fiscal deficit** (including grants) is projected at 28¾ percent of GDP in 2009, as the full impact of the adjustment effort will only be felt in 2010. The deficit is expected to decline to an average of 5¾ percent of GDP in 2010-14, owing to a strong fiscal consolidation. The budget is expected to remain in balance thereafter. As a result, the volume of domestic borrowing will decline, although its cost may rise somewhat as the stock of outstanding obligations from the government to the MMA are securitized at a slightly higher average market rate than the penal rate charged by the MMA on the government's overdraft account. Public external debt is assumed to be contracted mainly on concessional terms until the end of the projection period.

- **Government expenditures** are expected to decline from 63 percent of GDP in 2008 to 45 percent by 2014, mainly reflecting civil service reforms. The **government's revenue** measures—airport tax, ad valorem bed tax, business profits tax, and the general sales tax—are expected to yield about 15 percent of 2009 GDP once their full impact is felt. These new taxes will partly offset steep falls in import duties, lease payments, and profits transfers from SOEs, stemming, respectively, from the fall in public expenditure, a moderation in future lease payments from resorts, and privatization.

III.   EXTERNAL DEBT SUSTAINABILITY[5]

Baseline Scenario

4.   **Maldives' external debt has increased rapidly since the Tsunami,** reflecting an increase in both public external financing and private foreign-financed investment. As of end-2008, PPG debt represented 49 percent of total external debt. The external debt path is expected to worsen in the near term, as the Maldivian authorities seek external assistance to tide over the difficult economic situation. In particular, this includes financial assistance from the Indian government totaling US$200 million,[6] and borrowing from IFIs (IMF, World Bank, and Asian Development Bank) projected at US$146 million. The authorities are also expecting additional nonconcessional external borrowing through end-2010.[7] This borrowing explains the hump in the path of external debt service in 2010–11. The external-debt-to-GDP ratio, however, is projected to decline from 2010 onwards.

5.   **With one minor and temporary exception, all external debt indicators remain below the debt burden thresholds under the baseline scenario.** The PV of external public debt-to-GDP ratio is projected to be slightly above the 40 percent threshold this year, but trend down thereafter as expected program implementation helps reduce the current account deficit to sustainable levels. This marginal and temporary breach of the threshold is due in large part to the extraordinary fiscal and current account imbalances of the past two years, which the Fund-supported program aims to address. The program also places a ceiling on non-concessional public external borrowing going forward. All other public external debt burden indicators remain well below thresholds throughout the projection period. While there is a hump in debt service payments over the next two years as a result of a repayment of a large loan from the Indian government, both debt service ratios remain well within the thresholds.

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[5] External debt sustainability analysis is focused on PPG external debt, to which thresholds are applicable. Private external debt is not considered for the purpose of IDA grant allocations.

[6] A credit of US$100 million was made available to the government of Maldives by the government of India in early 2009, and repayments in the tune of US$50 million in two tranches are expected to be made in 2010 and 2011, respectively. Also, the Male branch of the State Bank of India (SBI) is expecting to contract a US$100 million two-year non-concessional loan (subject to fifty percent rollover) from its parent by end 2009 and early 2010, and on-lend it to the government of Maldives in exchange for foreign currency-denominated domestic bonds.

[7] Such borrowing includes a foreign exchange swap with the Central Bank of Sri Lanka for at least US$25 million to boost international reserves, as well as the following infrastructure and development projects: (i) the construction of ten harbors, which has been favorably assessed by the Board of the Islamic Development Bank (IDB) and is being financed as follows—Saudi Fund ($15 million), the IDB ($15 million), and OFID ($10 million); (ii) an infrastructure development project (housing, sewerage, electricity, and desalination) in tsunami affected areas funded by Abu Dhabi ($15 million); and (iii) reclamation projects and supply of equipment to be financed by loans under negotiation. The terms of such financing vary, but are generally very favorable in relation to terms that Maldives may have received had it sought to borrow on international or domestic financial markets.

Stress Tests and Alternative Scenarios

6.   **Stress tests indicate vulnerability to exogenous export shocks.** The PV of debt-to-GDP ratio, debt-to-exports ratio and debt service-to-exports ratios breach the thresholds under the most extreme standard stress test. For the former, the most extreme stress test is the combination shock—a one standard deviation shock to growth, exports, GDP deflator and non-debt flows— while in the latter two cases the most extreme shock is the export shock—an export value growth at historical average minus one standard deviation in 2010–11 relative to the 2008 baseline. This highlights the vulnerability of the economy to the variability of tourism receipts.

7.   **The historical scenario indicates unsustainable debt dynamics.** When key macroeconomic variables are set to their historical averages all stock debt burden indicators breach respective thresholds, while the debt service burden indicators show an increasing trend after 2014. The key factor driving this scenario is the non-interest current account deficit, which averaged 20 percent of GDP over the 10-year period to 2008. This 10-year average contains three rather extreme events that drove the current account deficit to unprecedented highs: the 2004 tsunami, the extraordinary run-up in food and fuel prices in 2007 and 2008, and the rising fiscal deficit of the past few years. To the extent that the magnitudes of these events can be considered unique, the historical scenario may overestimate potential risks of debt distress. Nevertheless, the simulations illustrate that without significant fiscal consolidation the debt path would become unsustainable.

8.   **Private external debt may increase the risks to debt sustainability.** Private external debt accounts for over one half of the external debt-to-GDP ratio. Much of this debt is at maturities of less than 10 years, at market interest rates, and denominated in U.S. dollars. To the extent that private external debt may increase liquidity and re-financing risks for the country as a whole, or entail contingent liabilities for the sovereign, the risks to debt sustainability could be higher than an analysis of external PPG data alone may suggest. Moreover, private external debt may be underestimated in Maldives: non-FDI external inflows to the non-financial private sector—which comprise mainly financing for privatization and tourism projects, and which sum to about 60 percent of GDP over 2009—2012—are treated as non-debt creating in both observed data and projections. Part of these flows, however, could be debt creating. [8]

9.   **In the staff's view, the risk of public external debt distress for Maldives is moderate.** With one exception, no external debt burden indicator breaches the thresholds in the baseline scenario. Staff judges the marginal and temporary breach in the external debt-to-GDP ratio to be a function of the severe fiscal and current account imbalances over the past two years that the

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[8]The authorities do not have adequate information to disaggregate these flows into FDI and arm's length borrowing. Accordingly, the FDI account in the balance of payments may also be underestimated.

program aims to address.[9] The steady decline in external debt burden indicators under the program indicates that the risk of debt distress declines significantly with the proposed fiscal adjustment. However, stress tests illustrate that the debt path is particularly vulnerable to export shocks and decline in non-debt creating inflows, while the historical scenario shows unsustainable debt dynamics.

IV. PUBLIC DEBT SUSTAINABILITY

Baseline Scenario

10.   **The stock of Maldives' nominal public debt has increased rapidly since the 2004 tsunami**, from 55 percent of GDP in 2004 to around 69 percent in 2008, and is expected to reach 94 percent of GDP (including IMF loans and some transactions of financial entities) in 2009.[10] This sharp increase has been driven by an expansionary fiscal policy combined with a dramatic shortfall in fiscal revenue. Much of the fiscal deficit over the next two years has been financed domestically, through MMA credit to the government (which in 2008 represented 75 percent of the central government's domestic debt and 55 percent of the total public domestic debt stock) and sales of t-bills, held mainly by commercial banks. Total public debt service cost has remained at an average of 7 percent of GDP a year in 2003–2008, and is expected to increase to 17.2 percent by 2010 before shifting to a downward trajectory later in the projection period.

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[9] Recent experience has demonstrated flexibility in rating of external debt distress (SM/09/216), including in Mongolia (2009), Madagascar (2008), Mali (2008) and in Bhutan (2007). In the case of Bhutan, the incorporation of two new largely debt financed hydropower projects in the baseline scenario caused some external debt indicators to breach their thresholds in both the baseline and the alternative scenarios/stress tests. However, on account of several country-specific mitigating factors a moderate risk of debt distress rating was retained. Other recent cases of flexible treatment on ratings include Mongolia (2009).

[10] Public debt refers here to the debt of the non-financial public sector, comprising the central government and state-owned enterprises, as well as publicly guaranteed debt. In line with inclusion of IMF debt contracted by the central banks, it also includes a currency swap between the MMA and the central bank of Sri Lanka for $25 million currently being negotiated. The central government accounted in 2008 for 79 percent of the total public debt. The present value of total public debt in 2008 was 67 percent of GDP.

Maldives: Total Public and Publicly Guaranteed (PPG) Debt by Creditor
(In percent of GDP)

	2004	2005	2006	2007	2008	2009 Proj.	2010 Proj.
Total PPG debt	55.2	64.9	62.9	66.4	68.6	94.0	98.7
PPG external 1/	40.1	41.3	39.6	39.8	37.4	47.3	44.2
Multilateral	23.5	24.2	24.8	25.8	22.5	26.9	25.2
Bilateral	3.9	5.2	4.8	4.3	4.6	8.8	8.2
Private creditor	12.8	11.9	10.0	9.7	10.2	11.6	10.8
PPG domestic	15.1	23.6	23.4	26.5	31.2	46.8	54.5
MMA	8.7	15.0	9.4	8.1	17.0	20.1	19.3
Commercial banks	2.6	5.1	7.7	11.5	13.5	24.9	29.0
Others	3.8	3.5	6.3	6.9	0.7	1.8	6.2
Total PPG debt service	6.8	7.9	7.1	7.3	7.8	9.0	17.2

1/ Includes IMF and currency swaps by MMA, but excludes domestic foreign-currency denominated debt.

11.   **The PV of the public debt-to-GDP ratio is projected to fall sharply under the baseline scenario**, from 91 percent in 2009 to 17 percent by 2029, owing to strong fiscal adjustment efforts on both the revenue and expenditure sides (Table 2a). The PV of the public debt-to-revenue (including grants) ratio would decline from a projected 252 percent in 2009 to 39 percent by 2029. The public debt service-to-revenue (including grants) ratio would increase to 28 percent by 2010 before shifting to a downward trajectory later in the projection period (Figure 2 and Table 2a). New public borrowing from all sources in the context of the program, including Fund financing, has been considered, and risks to debt sustainability appear manageable in the context of the programmed fiscal adjustment.

Stress Tests and Alternative Scenarios

12.   **Maldives' high level of public debt makes its sustainability vulnerable to exogenous shocks or fiscal policy slippages.** The stress tests indicate that the debt path is particularly vulnerable to shocks to the primary balance and long term growth. If the primary deficit remains fixed at the elevated level of 26½ percent of GDP (as in 2009), the debt ratio would continue to expand and would reach 416 percent of GDP by 2029. This, of course, illustrates that the current fiscal stance is not sustainable. It also points to the risks arising from insufficient or delayed implementation of the fiscal adjustment measures envisaged in the program. Sensitivity tests also show that the public debt path is susceptible to shocks to long-term real GDP growth, with a one standard deviation permanent shock to growth leading to a PV public debt ratio of 124 percent of GDP in 2029, compared with a baseline projection of 17 percent.

V. CONCLUSION

13.   **Maldives faces a moderate risk of external PPG debt distress.** With the exception of a one-time breach in the PV of debt-to-GDP threshold in 2009, no thresholds are breached under the baseline scenario, but the analysis indicates the country's vulnerability to shocks to the tourism sector (which are also shocks to growth), non-debt creating inflows and the primary

balance. This suggests the need to diversify, to the extent possible within the country's geographical constraints, the structure of the economy. Maldives also faces considerable risks to debt sustainability based on its overall public debt level. This underscores the need for strong fiscal adjustment: should the authorities fall short on their fiscal consolidation efforts, the risk of the public and external debt ratio moving on to an unsustainable trajectory would significantly increase.

Figure 1. Maldives: Indicators of Public and Publicly Guaranteed External Debt under
Baseline and Alternative Scenarios, 2009-2029 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

Rate of Debt Accumulation
Grant element of new borrowing (% right scale)
Grant-equivalent financing (% of GDP)

Baseline   Historical scenario   Most extreme shock 1/   Threshold
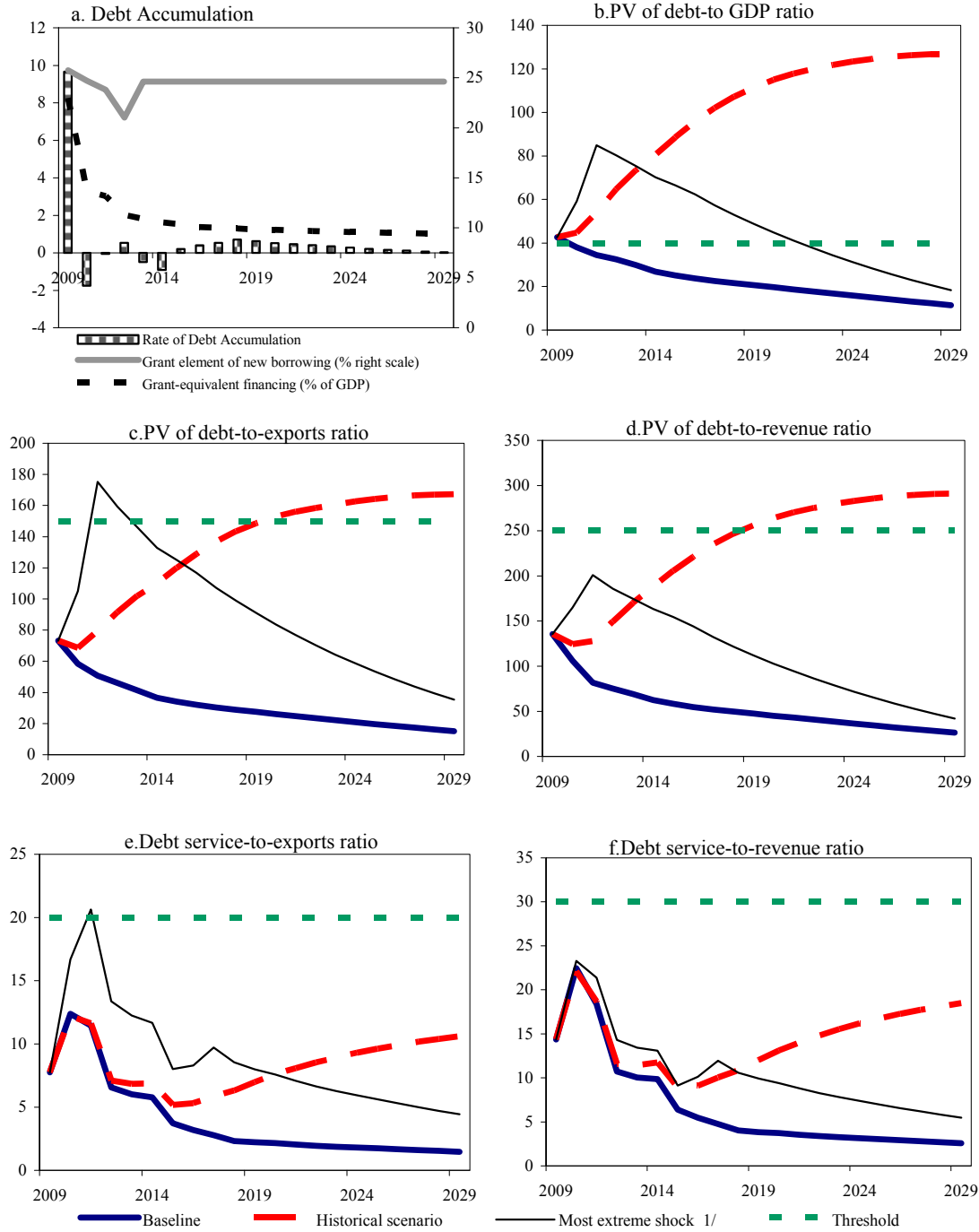
Source: Staff projections and simulations.

1/ The most extreme stress test is the test that yields the highest ratio in 2019. In figure b. it corresponds to a Combination shock; in
c. to a Exports shock; in d. to a Combination shock; in e. to a Exports shock and in figure f. to a Combination shock

Figure 2. Maldives: Indicators of Public Debt Under Baseline and Alternative Scenarios, 2009-2029 1/
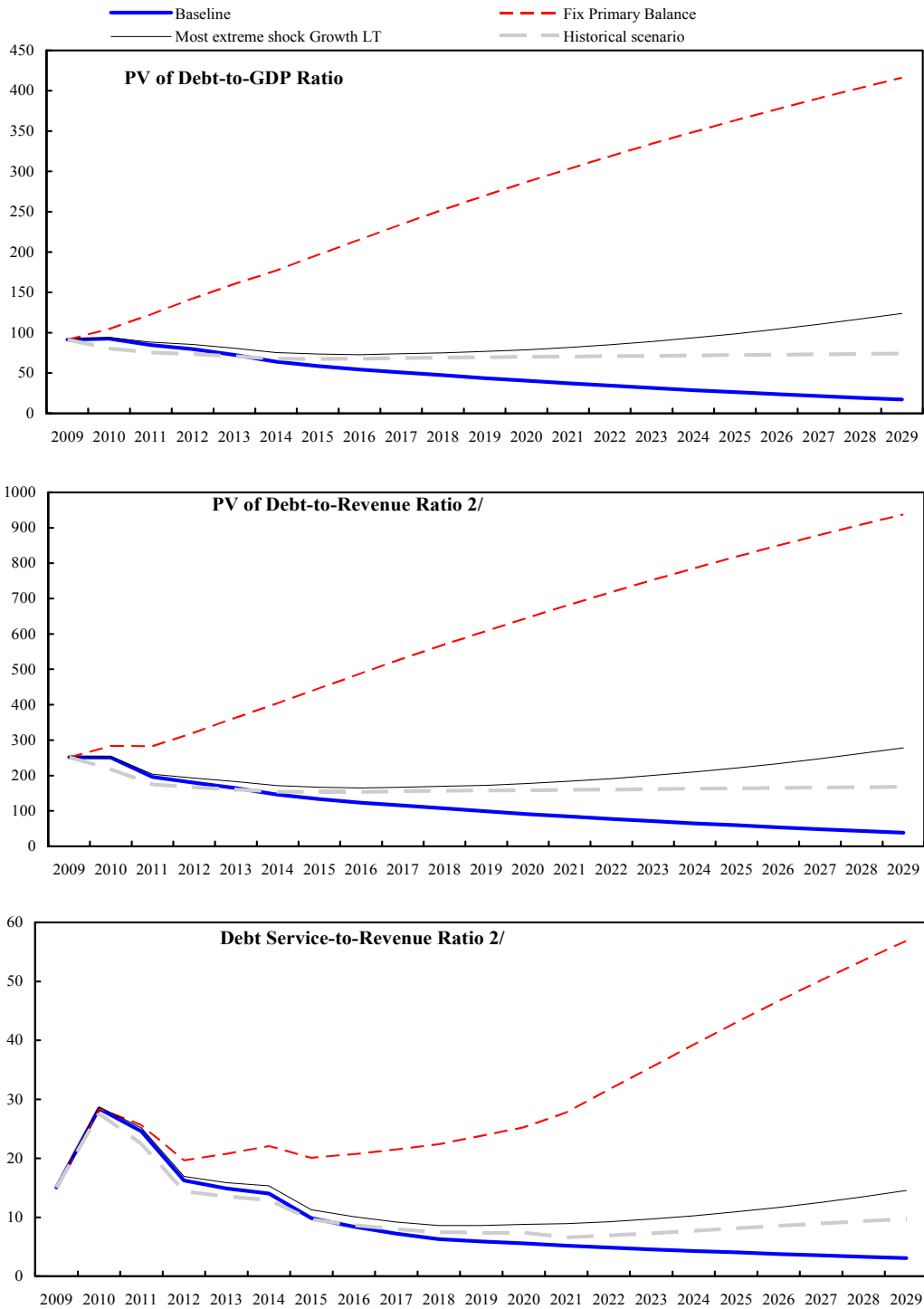
Sources: Maldivian authorities; and Fund staff estimates and projections.
  1/ The most extreme stress test is the test that yields the highest ratio in 2019.
  2/ Revenues are defined inclusive of grants.

Table 1a.: External Debt Sustainability Framework, 2006-2029 1/

(In percent of GDP, unless otherwise indicated)

	Actual			Historical 0	Standard	Projections						2009-2014			2015-2029
				Average 0	Deviation										
	2006	2007	2008			2009	2010	2011	2012	2013	2014	Average	2019	2029	Average
External debt (nominal) 1/	**62.8**	**79.7**	**76.9**			**83.9**	**86.2**	**74.2**	**66.4**	**60.1**	**54.4**		**40.5**	**21.1**	
o/w public and publicly guaranteed (PPG)	39.6	39.8	37.4			49.1	50.4	45.5	42.3	38.5	34.3		26.6	14.4	
a. Change in external debt	9.8	16.9	-2.8			7.1	2.3	-12.1	-7.7	-6.3	-5.6		-2.4	-1.6	
b. Identified net debt-creating flows	7.5	13.9	12.7			16.2	3.9	-3.8	-5.5	-5.1	-4.4		-2.9	-2.7	
Non-interest current account deficit	**30.3**	**37.3**	**48.9**	**21.1**	**16.9**	**27.2**	**20.5**	**10.2**	**8.5**	**7.1**	**5.9**		**3.9**	**2.2**	3.3
Deficit in balance of goods and services	29.4	33.9	41.3			20.2	12.7	5.3	1.9	-0.2	-1.8		-3.8	-4.8	
Exports	84.9	83.2	83.4			58.2	65.1	67.9	70.6	72.0	73.4		75.1	75.9	
Imports	114.3	117.1	124.7			78.4	77.8	73.2	72.5	71.8	71.5		71.2	71.0	
Net current transfers (negative = inflow)	-0.9	1.3	5.0	1.8	7.7	4.8	6.2	3.7	5.0	5.0	5.1		5.5	5.5	5.4
o/w official	-7.4	-7.7	-4.7			-4.8	-1.1	-1.0	-1.0	-0.9	-0.9		-0.8	-0.8	
Other current account flows (negative = net inflow)	1.7	2.2	2.6			2.2	1.6	1.3	1.7	2.2	2.6		2.3	1.5	
Net FDI (negative = inflow) 2/	-16.1	-20.2	-26.3	-7.6	9.5	-17.0	-17.6	-14.9	-14.3	-12.2	-10.1		-6.5	-4.6	-6.0
Endogenous debt dynamics 3/	-6.6	-3.3	-9.9			6.0	1.0	0.9	0.3	0.0	-0.1		-0.4	-0.3	
Contribution from nominal interest rate	3.0	5.0	3.1			3.1	3.6	3.7	3.1	2.7	2.4		1.4	0.7	
Contribution from real GDP growth	-7.8	-3.9	-3.9			2.9	-2.6	-2.9	-2.8	-2.6	-2.5		-1.8	-0.9	
Contribution from price and exchange rate changes	-1.8	-4.3	-9.2			…	…	…	…	…	…		…	…	
Residual (a-b) 4/	**2.3**	**3.0**	**-15.5**			**-9.2**	**-1.6**	**-8.2**	**-2.2**	**-1.2**	**-1.3**		**0.6**	**1.1**	
o/w 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 5/	…	…	75.3			77.5	73.9	63.2	56.6	51.4	47.0		34.6	18.1	
In percent of exports	…	…	90.2			133.1	113.6	93.0	80.2	71.5	64.0		46.0	23.9	
PV of PPG external debt	**...**	**...**	**35.8**			**42.7**	**38.1**	**34.5**	**32.5**	**29.8**	**26.9**		**20.6**	**11.5**	
In percent of exports	**...**	**...**	**42.9**			73.3	58.5	50.8	46.1	41.4	36.6		27.5	15.1	
In percent of government revenues	**...**	**...**	**80.7**			135.6	106.1	81.6	75.2	69.1	62.5		47.4	26.3	
Debt service-to-exports ratio (in percent)	7.6	10.4	10.0			15.3	19.8	18.3	12.4	11.2	8.2		3.3	2.0	
PPG debt service-to-exports ratio (in percent)	4.1	4.5	4.7			7.8	12.4	11.4	6.6	6.0	5.8		2.2	1.5	
PPG debt service-to-revenue ratio (in percent)	7.8	7.8	8.9			14.4	22.5	18.4	10.7	10.0	9.9		3.8	2.6	
Total gross financing need (Millions of U.S. dollars)	225.8	363.8	571.1			470.3	425.4	303.8	210.6	198.4	175.7		118.0	65.9	
Non-interest current account deficit that stabilizes debt ratio	20.4	20.4	51.7			20.1	18.2	22.3	16.3	13.4	11.5		6.3	3.7	
Key macroeconomic assumptions															
Real GDP growth (in percent)	18.0	7.2	5.8	6.6	5.6	-4.0	3.4	3.7	4.1	4.3	4.5	2.6	4.5	4.5	4.5
GDP deflator in US dollar terms (change in percent)	3.5	7.4	13.0	2.3	4.9	11.0	4.0	6.3	3.5	3.0	3.0	5.1	3.0	3.0	3.0
Effective interest rate (percent) 6/	6.9	9.1	4.7	4.3	2.1	4.3	4.6	4.8	4.5	4.3	4.2	4.5	3.5	3.3	3.5
Growth of exports of G&S (US dollar terms, in percent)	60.4	12.9	19.9	11.5	22.3	-25.6	20.1	15.0	12.0	9.5	9.7	6.8	8.1	7.6	7.9
Growth of imports of G&S (US dollar terms, in percent)	20.5	17.9	27.4	15.0	12.3	-33.0	6.6	3.7	6.7	6.4	7.3	-0.4	7.6	7.6	7.6
Grant element of new public sector borrowing (in percent)	…	…	…	…	…	25.8	24.7	23.8	21.0	24.6	24.6	24.1	24.6	24.6	24.6
Government revenues (excluding grants, in percent of GDP)	44.7	48.1	44.4			31.5	35.9	42.3	43.3	43.1	43.0		43.6	43.6	43.5
Aid flows (in Millions of US dollars) 8/	118.3	128.6	83.7			104.4	42.1	42.3	29.9	30.2	29.6		33.5	58.0	
o/w Grants	67.8	81.6	58.9			64.5	15.7	16.7	16.9	17.2	17.6		22.5	47.0	
o/w Concessional loans	50.6	47.1	24.8			39.8	26.5	25.7	13.0	13.0	12.0		11.0	11.0	
Grant-equivalent financing (in percent of GDP) 9/	…	…	…			8.3	3.3	3.0	2.0	1.8	1.6		1.3	1.0	1.2
Grant-equivalent financing (in percent of external financing) 9/	…	…	…			45.3	33.0	32.3	34.3	40.4	41.7		46.5	59.4	50.5
Memorandum items:															
Nominal GDP (Millions of US dollars)	915.4	1054.2	1260.7			1343.2	1443.7	1590.2	1713.7	1840.5	1980.8		2861.6	5972.2	
Nominal dollar GDP growth	22.1	15.2	19.6			6.5	7.5	10.1	7.8	7.4	7.6	**7.8**	7.6	7.6	7.6
PV of PPG external debt (in Millions of US dollars)			451.2			573.0	549.5	548.7	557.2	548.8	532.1		590.9	684.3	
(PVt-PVt-1)/GDPt-1 (in percent)						**9.7**	**-1.7**	**-0.1**	**0.5**	**-0.5**	**-0.9**	**1.2**	**0.6**	**0.0**	**0.3**

Sources: Country authorities; and staff estimates and projections.

1/ Includes both public and private sector external debt.

2/ includes other non-debt creating flows.

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

4/ 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.
    Very large residuals come from errors & omissions.

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

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

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

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

9/ 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).

10/ The government can contract up to 120 million USD in additional nonconcessional external debt from the beginning of the Fund-supported program to end-2010, as per the PCs on contracting and guaranteeing of
 new nonconcessional external debt.

Table 1b.Maldives: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2009-2029

(In percent)

										Projections											
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	**2019**	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
PV of debt-to GDP ratio																					
Baseline	43	38	35	33	30	27	25	24	23	22	**21**	20	19	18	17	16	15	14	13	12	11
A. Alternative Scenarios																					
A1. Key variables at their historical averages in 2009-2029 1/	43	45	54	65	73	81	89	96	102	107	**112**	115	118	120	122	123	125	126	126	127	127
A2. New public sector loans on less favorable terms in 2009-2029 2	43	40	38	37	35	33	31	30	29	29	**28**	27	26	26	25	24	23	22	21	20	19
B. Bound Tests																					
B1. Real GDP growth at historical average minus one standard deviation in 2010-2011	43	38	35	32	29	26	24	23	21	20	**19**	18	17	17	16	15	14	13	12	11	11
B2. Export value growth at historical average minus one standard deviation in 2010-2011 3/	43	51	68	65	60	56	53	50	46	42	**39**	36	33	31	28	26	23	21	19	17	15
B3. US dollar GDP deflator at historical average minus one standard deviation in 2010-2011	43	40	39	36	33	29	27	25	24	23	**22**	20	19	18	17	16	16	15	14	13	12
B4. Net non-debt creating flows at historical average minus one standard deviation in 2010-2011 4/	43	55	68	64	60	56	53	49	45	42	**39**	36	33	30	28	25	23	21	19	17	15
B5. Combination of B1-B4 using one-half standard deviation shocks	43	59	85	80	75	70	67	62	57	53	**49**	45	41	38	34	31	28	26	23	21	18
B6. One-time 30 percent nominal depreciation relative to the baseline in 2010 5/	43	53	47	43	39	35	32	30	29	27	**26**	25	23	22	21	20	19	18	16	15	14
PV of debt-to-exports ratio																					
Baseline	73	58	51	46	41	37	34	32	30	29	**28**	26	25	23	22	21	20	19	17	16	15
A. Alternative Scenarios																					
A1. Key variables at their historical averages in 2009-2029 1/	73	69	80	92	102	110	120	129	137	143	**149**	153	156	159	161	163	164	166	166	167	167
A2. New public sector loans on less favorable terms in 2009-2029 2	73	62	56	52	49	44	42	41	40	38	**37**	36	35	34	33	32	30	29	28	27	26
B. Bound Tests																					
B1. Real GDP growth at historical average minus one standard deviation in 2010-2011	73	58	49	44	39	34	31	29	27	26	**25**	23	22	21	20	19	18	16	15	14	13
B2. Export value growth at historical average minus one standard deviation in 2010-2011 3/	73	105	175	159	146	133	125	117	107	99	**91**	84	77	70	64	59	53	49	44	39	35
B3. US dollar GDP deflator at historical average minus one standard deviation in 2010-2011	73	58	49	44	39	34	31	29	27	26	**25**	23	22	21	20	19	18	16	15	14	13
B4. Net non-debt creating flows at historical average minus one standard deviation in 2010-2011 4/	73	85	100	91	83	76	71	66	61	56	**52**	48	44	40	37	33	30	28	25	22	20
B5. Combination of B1-B4 using one-half standard deviation shocks	73	105	156	142	131	119	112	105	96	88	**81**	74	68	62	56	51	47	42	38	34	30
B6. One-time 30 percent nominal depreciation relative to the baseline in 2010 5/	73	58	49	44	39	34	31	29	27	26	**25**	23	22	21	20	19	18	16	15	14	13
PV of debt-to-revenue ratio																					
Baseline	136	106	82	75	69	63	58	55	52	50	**47**	45	43	41	39	36	34	32	30	28	26
A. Alternative Scenarios																					
A1. Key variables at their historical averages in 2009-2029 1/	136	125	128	149	170	188	206	221	235	247	**256**	264	270	275	280	283	286	288	290	291	291
A2. New public sector loans on less favorable terms in 2009-2029 2	136	112	90	85	81	76	73	70	68	66	**64**	63	61	59	57	55	53	51	49	47	45
B. Bound Tests																					
B1. Real GDP growth at historical average minus one standard deviation in 2010-2011	136	107	83	75	68	61	56	52	49	47	**44**	42	40	38	36	34	32	30	28	26	25
B2. Export value growth at historical average minus one standard deviation in 2010-2011 3/	136	141	162	149	140	130	123	115	106	98	**90**	83	76	70	64	59	54	49	44	40	35
B3. US dollar GDP deflator at historical average minus one standard deviation in 2010-2011	136	112	92	83	76	67	62	58	55	52	**49**	47	45	42	40	38	36	33	31	29	27
B4. Net non-debt creating flows at historical average minus one standard deviation in 2010-2011 4/	136	155	161	148	139	129	122	114	105	97	**89**	82	76	69	64	58	53	48	43	39	35
B5. Combination of B1-B4 using one-half standard deviation shocks	136	165	201	186	175	163	154	144	132	122	**112**	103	94	86	79	72	65	59	53	47	42
B6. One-time 30 percent nominal depreciation relative to the baseline in 2010 5/	136	147	111	101	91	81	75	70	66	63	**60**	57	54	51	48	46	43	40	38	35	33

Table 1b.Maldives: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2009-2029 (continued)

(In percent)

Debt service-to-exports ratio

Baseline	8	12	11	7	6	6	4	3	3	2	**2**	2	2	2	2	2	2	2	2	2	1
A. Alternative Scenarios																					
A1. Key variables at their historical averages in 2009-2029 1/	8	12	12	7	7	7	5	5	6	6	**7**	8	8	9	9	9	10	10	10	10	11
A2. New public sector loans on less favorable terms in 2009-2029 2	8	12	11	6	5	4	2	3	3	3	**2**	2	2	2	2	2	2	2	2	2	2
B. Bound Tests																					
B1. Real GDP growth at historical average minus one standard deviation in 2010-2011	8	12	11	7	6	6	4	3	3	2	**2**	2	2	2	2	2	2	1	1	1	1
B2. Export value growth at historical average minus one standard deviation in 2010-2011 3/	8	17	21	13	12	12	8	8	10	9	**8**	8	7	7	6	6	6	5	5	5	4
B3. US dollar GDP deflator at historical average minus one standard deviation in 2010-2011	8	12	11	7	6	6	4	3	3	2	**2**	2	2	2	2	2	2	1	1	1	1
B4. Net non-debt creating flows at historical average minus one standard deviation in 2010-2011 4/	8	12	12	8	7	7	5	5	6	5	**5**	4	4	4	4	3	3	3	3	3	3
B5. Combination of B1-B4 using one-half standard deviation shocks	8	15	17	11	10	10	7	7	9	8	**7**	7	6	6	6	5	5	5	4	4	4
B6. One-time 30 percent nominal depreciation relative to the baseline in 2010 5/	8	12	11	7	6	6	4	3	3	2	**2**	2	2	2	2	2	2	1	1	1	1

Debt service-to-revenue ratio

Baseline	14	22	18	11	10	10	6	5	5	4	**4**	4	4	3	3	3	3	3	3	3	3
A. Alternative Scenarios																					
A1. Key variables at their historical averages in 2009-2029 1/	14	22	19	12	11	12	9	9	10	11	**12**	13	14	15	16	16	17	17	18	18	18
A2. New public sector loans on less favorable terms in 2009-2029 2	14	22	17	9	8	7	4	4	5	4	**4**	4	4	4	4	4	4	4	4	4	4
B. Bound Tests																					
B1. Real GDP growth at historical average minus one standard deviation in 2010-2011	14	23	19	11	10	10	7	6	5	4	**4**	4	3	3	3	3	3	3	3	3	2
B2. Export value growth at historical average minus one standard deviation in 2010-2011 3/	14	22	19	13	12	11	8	8	10	8	**8**	8	7	7	6	6	6	5	5	5	4
B3. US dollar GDP deflator at historical average minus one standard deviation in 2010-2011	14	24	21	12	12	11	7	6	5	4	**4**	4	4	3	3	3	3	3	3	3	3
B4. Net non-debt creating flows at historical average minus one standard deviation in 2010-2011 4/	14	22	19	13	12	11	8	9	10	8	**8**	7	7	6	6	6	5	5	5	4	4
B5. Combination of B1-B4 using one-half standard deviation shocks	14	23	21	14	13	13	9	10	12	11	**10**	9	9	8	8	7	7	7	6	6	5
B6. One-time 30 percent nominal depreciation relative to the baseline in 2010 5/	14	32	26	15	14	14	9	7	6	5	**5**	5	5	4	4	4	4	4	4	3	3

Memorandum item:

Grant element assumed on residual financing (i.e., financing required above baseline) 6/	21	21	21	21	21	21	21	21	21	21	**21**	21	21	21	21	21	21	21	21	21	21

Source: Staff projections and simulations.

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

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

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

4/ Includes official and private transfers and FDI.

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

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

Table 2a. Maldives: Public Sector Debt Sustainability Framework, 2006-2029
(In percent of GDP, unless otherwise indicated)

	Actual			Average	Standard Deviation	Estimate	Projections					2009-14 Average	2019	2029	2015-29 Average
	2006	2007	2008			2009	2010	2011	2012	2013	2014				
Public sector debt 1/	62.9	66.4	68.6			94.0	98.7	92.1	87.0	79.8	71.4		49.8	20.1	
o/w foreign-currency denominated	39.6	39.8	37.4			49.1	50.4	45.5	42.3	38.5	34.3		26.6	14.4	
Change in public sector debt	-2.0	3.4	2.2			25.4	4.7	-6.6	-5.1	-7.2	-8.4		-4.0	-2.4	
Identified debt-creating flows	-5.0	-3.6	2.7			21.5	4.3	-8.3	-5.7	-6.2	-7.0		-3.9	-2.4	
Primary deficit	5.5	3.2	11.8	4.5	3.5	26.4	14.2	0.2	0.1	-0.9	-1.7	6.4	-1.4	-1.2	-1.4
Revenue and grants	52.1	55.8	49.0			36.3	37.0	43.4	44.2	44.1	43.9		44.4	44.4	
of which: grants	7.4	7.7	4.7			4.8	1.1	1.0	1.0	0.9	0.9		0.8	0.8	
Primary (noninterest) expenditure	57.6	59.0	60.8			62.7	51.2	43.6	44.3	43.2	42.1		42.9	43.1	
Automatic debt dynamics	-10.1	-6.5	-8.9			-1.9	-2.8	-5.1	-3.1	-2.8	-2.9		-2.5	-1.1	
Contribution from interest rate/growth differential	-10.0	-5.1	-5.3			1.5	-1.9	-3.1	-2.4	-2.4	-2.5		-2.2	-1.0	
of which: contribution from average real interest rate	-0.1	-0.9	-1.7			-1.4	1.2	0.4	1.3	1.2	0.9		0.1	0.0	
of which: contribution from real GDP growth	-9.9	-4.2	-3.7			2.9	-3.1	-3.5	-3.6	-3.6	-3.4		-2.3	-1.0	
Contribution from real exchange rate depreciation	-0.1	-1.5	-3.5			-3.4	-1.0	-2.0	-0.7	-0.4	-0.4		...	...	
Other identified debt-creating flows	-0.4	-0.3	-0.3			-3.0	-7.0	-3.4	-2.7	-2.5	-2.4		0.0	0.0	
Privatization receipts (negative)	-0.4	-0.3	-0.3			-3.0	-7.0	-3.4	-2.7	-2.5	-2.4		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	3.0	7.1	-0.4			3.9	0.3	1.8	0.6	-0.9	-1.4		-0.1	0.0	
Other Sustainability Indicators															
PV of public sector debt	23.4	26.5	67.0			91.3	92.6	84.9	79.5	72.3	63.9		43.8	17.1	
o/w foreign-currency denominated	0.0	0.0	35.8			46.4	44.3	38.3	34.9	30.9	26.9		20.6	11.5	
o/w external	...	...	35.8			42.7	38.1	34.5	32.5	29.8	26.9		20.6	11.5	
PV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...	
Gross financing need 2/	29.2	28.0	38.7			61.2	70.0	60.4	54.0	49.5	43.9		25.2	6.6	
PV of public sector debt-to-revenue and grants ratio (in percent)	44.8	47.5	136.6			251.7	250.6	195.8	179.7	164.1	145.8		98.8	38.6	
PV of public sector debt-to-revenue ratio (in percent)	52.3	55.2	151.0			290.1	258.1	200.6	183.8	167.6	148.8		100.5	39.3	
o/w external 3/	...	...	80.7			135.6	106.1	81.6	75.2	69.1	62.5		47.4	26.3	
Debt service-to-revenue and grants ratio (in percent) 4/	8.3	8.0	9.7			15.1	28.4	24.6	16.2	14.9	14.0		5.9	3.1	
Debt service-to-revenue ratio (in percent) 4/	9.7	9.3	10.7			17.4	29.3	25.2	16.6	15.2	14.3		6.0	3.1	
Primary deficit that stabilizes the debt-to-GDP ratio	7.5	-0.2	9.6			1.0	9.5	6.8	5.2	6.3	6.7		2.6	1.1	
Key macroeconomic and fiscal assumptions															
Real GDP growth (in percent)	18.0	7.2	5.8	6.6	5.6	-4.0	3.4	3.7	4.1	4.3	4.5	2.6	4.5	4.5	4.5
Average nominal interest rate on forex debt (in percent)	2.6	2.9	3.6	2.6	0.4	4.0	2.6	2.4	2.4	2.4	2.3	2.7	1.6	1.6	1.7
Average real interest rate on domestic debt (in percent)	0.8	-3.4	-8.2	1.0	3.9	-7.0	2.0	0.3	2.3	2.3	1.9	0.3	0.9	0.8	1.0
Real exchange rate depreciation (in percent, + indicates depreciation)	-0.3	-4.0	-9.2	0.3	5.6	-8.5	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	3.5	7.4	13.0	3.1	4.1	11.0	4.0	6.2	3.5	3.0	3.0	5.1	3.0	3.0	3.0
Growth of real primary spending (deflated by GDP deflator, in percent)	0.2	0.1	0.1	0.2	0.2	0.0	-0.2	-0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Grant element of new external borrowing (in percent)	...	...	...	...	...	25.8	24.7	23.8	21.0	24.6	24.6	24.1	24.6	24.6	...

Sources: Maldivian authorities; and staff estimates and projections.
1/ Public debt refers here to the debt of the non-financial public sector, comprising the central government and state-owned enterprises, MMA's currency SWAP and publicly guaranteed debt. Gross debt is used.
2/ Gross financing need is defined as the primary deficit plus debt service plus the stock of short-term debt at the end of the last period.
3/ Revenues excluding grants.
4/ Debt service is defined as the sum of interest and amortization of medium and long-term debt.
5/ Historical averages and standard deviations are generally derived over the past 10 years, subject to data availability.

Table 2b.Maldives: Sensitivity Analysis for Key Indicators of Public Debt 2009-2029

	Projections							
	2009	2010	2011	2012	2013	2014	2019	2029
PV of Debt-to-GDP Ratio								
Baseline	91	93	85	80	72	64	44	17
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	91	80	76	74	71	68	70	74
A2. Primary balance is unchanged from 2009	91	105	123	142	160	177	270	416
A3. Permanently lower GDP growth 1/	91	94	88	85	81	75	77	124
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2010-2011	91	95	92	88	83	76	63	49
B2. Primary balance is at historical average minus one standard deviations in 2010-2011	91	86	87	81	74	66	45	18
B3. Combination of B1-B2 using one half standard deviation shocks	91	84	83	77	70	61	40	12
B4. One-time 30 percent real depreciation in 2010	91	110	101	95	87	78	56	28
B5. 10 percent of GDP increase in other debt-creating flows in 2010	91	102	94	89	81	72	51	22
PV of Debt-to-Revenue Ratio 2/								
Baseline	252	251	196	180	164	146	99	39
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	252	218	175	167	161	155	158	168
A2. Primary balance is unchanged from 2009	252	283	283	321	364	404	608	938
A3. Permanently lower GDP growth 1/	252	254	203	193	183	171	172	278
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2010-2011	252	258	212	199	187	173	143	110
B2. Primary balance is at historical average minus one standard deviations in 2010-2011	252	234	200	184	168	150	102	41
B3. Combination of B1-B2 using one half standard deviation shocks	252	228	191	175	159	140	91	28
B4. One-time 30 percent real depreciation in 2010	252	299	232	214	197	177	126	62
B5. 10 percent of GDP increase in other debt-creating flows in 2010	252	277	217	200	184	165	115	50
Debt Service-to-Revenue Ratio 2/								
Baseline	15	28	25	16	15	14	6	3
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	15	28	22	14	14	13	7	10
A2. Primary balance is unchanged from 2009	15	28	26	20	21	22	24	57
A3. Permanently lower GDP growth 1/	15	29	25	17	16	15	9	15
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2010-2011	15	29	26	17	16	15	8	7
B2. Primary balance is at historical average minus one standard deviations in 2010-2011	15	28	24	16	15	14	6	3
B3. Combination of B1-B2 using one half standard deviation shocks	15	28	24	16	15	14	6	2
B4. One-time 30 percent real depreciation in 2010	15	33	32	21	20	19	9	7
B5. 10 percent of GDP increase in other debt-creating flows in 2010	15	28	25	17	16	15	7	4

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