



# SOLOMON ISLANDS

## STAFF REPORT FOR THE 2013 ARTICLE IV CONSULTATION AND SECOND REVIEW UNDER THE EXTENDED CREDIT FACILITY ARRANGEMENT AND REQUEST FOR MODIFICATION OF PERFORMANCE CRITERION—DEBT SUSTAINABILITY ANALYSIS<sup>1</sup>

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*The Solomon Islands continues to face a moderate risk of external debt distress owing to possible shocks to non-debt-creating flows and financing terms. Containing the risk of debt distress will require continued efforts to maintain fiscal buffers, strengthen the budget process to improve fiscal discipline and the quality of spending, and implement structural reforms that are essential for promoting broad-based growth.*

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<sup>1</sup> This DSA update was prepared in the context of the second review of the ECF arrangements that took place in October 2013. It updates the last full joint Bank-Fund DSA conducted in November 2012 (SM/12/333). A post-mortem of the November 2012 DSA is not included given that the medium and long term assumptions and conclusions remain broadly unchanged. The DSA update is based on the common standard LIC DSA framework. Under the Country Policy and Institutional Assessment (CPIA), the Solomon Islands is rated a weak performer, and the DSA uses the indicative threshold indicators on the external public debt for countries in this category: 30 percent for the present value (PV) of debt-to-GDP ratio; 100 percent for the PV of the debt-to-export ratio; 200 percent for the PV of the debt-to-revenue ratio; 15 percent for the debt-service-to-exports ratio; and 18 percent for the debt-service-to-revenue ratio. The Solomon Islands' fiscal year begins on January 1.

## ASSUMPTIONS AND RECENT DEBT DEVELOPMENTS

1. **Context.** As described in the 2012 DSA, fiscal buffers have been rebuilt in the Solomon Islands in recent years. Total public debt fell to about 17½ percent of GDP at the end of 2012 from some 60 percent in 2005 under the framework of the Honiara Club Agreement (HCA). The Debt Management Strategy (DMS) endorsed by Cabinet in 2012 provides a framework to anchor borrowing plans going forward.
2. **Assumptions.** Key macroeconomic assumptions were revised in the context of the second review of the Solomon Islands' ECF, taking into account developments through mid-2013. The scaling-down of the operations of the Regional Assistance Mission to Solomon Islands (RAMSI) at the end of 2012 and the revision in the Gold Ridge gold mine capacity result in a further deterioration in the trade and current account balance in the medium term. The discount rate used to calculate the net present value (NPV) of the external debt was changed from three to five percent (SM/13/271).<sup>2</sup> Box 1 summarizes the key assumptions.

### Box 1. Macroeconomic Assumptions under the Baseline Scenario

- **GDP growth and inflation.** After rebounding to nearly 11 percent in 2011, growth has slowed and is projected to moderate to 3½ percent over the medium and long term. GDP deflator growth is likely to decline from recent rates but remain near historical levels at 5½ percent.
- **Logging and mining.** Log production is expected to decline by about 7 percent each year until 2025 after which it will remain stable. With the transfer of Gold Ridge ownership, gold production has been revised downwards to 64,000 ounces in 2013 and maximum capacity to 76,000 ounces.
- **Aid flows and FDI.** Aid flows declined in 2012 with the scaling-down of the operations of the Regional Assistance Mission to Solomon Islands (RAMSI). There was also a number of major capital projects completed by donors in 2012, skewing the allocation between current and capital account donor transfers. The ratio is projected to return to historical norm going forward. As a result, aid flows are expected to average about 15 percent over the medium term and 9 percent over the long term. FDI is projected at about 8 percent over the medium term and 6 percent over the longer term, with resumption in external borrowing making up the difference in financing the current account deficit.
- **External borrowing.** New loan disbursements are expected to begin in 2014 to finance the undersea fiber optic cable. Concessional borrowing is projected to average about 2½ percent of GDP annually over the next five years and 3½ percent over the longer term.
- **Fiscal outlook.** The primary balance is expected to generate a deficit of about 1 percent of GDP in the

<sup>2</sup> IMF Staff Paper on 'Unification of Discount Rates Used In External Debt Analysis for Low-Income Countries', 4 October, 2013. The system of discount rates was complex, with different discount rates applying to different currencies, linked to market interest rates in different ways and updated with varying frequencies. Further, the methodology for determining the discount rate produced an unwarranted tightening of assessed borrowing space available to LICs in recent years, especially following the easing in monetary conditions since 2009. The discount rate fell by 2 percentage points between 2009 and 2013, to 3 percent, pushing up the estimated present value of LIC debt and reducing the assessed borrowing space available to LICs. A uniform discount rate, used for both present value and grant element calculations in the Debt Sustainability Analysis addresses the unnecessary complexity and is consistent with the convergence of long-term interest rates across major economies. Resetting the discount rate set to 5 percent broadly aligns it with the discount rate currently used for calculating the grant element of long-term U.S. dollar-denominated loans.

medium and long term. This shift is attributable to the projected fall in grants, and logging and mining revenues while additional external borrowing would only partially substitute for previously grant-funded development expenditure. Revenue (excluding grants) is forecast at about 27 percent of GDP over the longer term.

- **The non-interest current account deficit** is projected to increase to about 12½ percent in the next two years reflecting a number of import intensive projects in the pipeline (the undersea cable, Soltuna and USP campus expansions). The higher deficit over the medium term reflects the major downward revision in gold mine capacity.

**External debt.** Despite the amendment of the Honiara Club Agreement (HCA) to allow for external borrowing to resume, the Solomon Islands government has not contracted new external debt in 2013 due to delays in the start of the undersea cable project. The gross external public and publicly guaranteed (PPG) debt is expected to decline to 11.3 percent of GDP by the end of 2013. Total public sector debt is expected to decline to 14½ percent.

## EXTERNAL AND PUBLIC DEBT SUSTAINABILITY ANALYSIS

### A. External Debt Sustainability Analysis

3. **Under the baseline scenario all external PPG debt indicators remain below the policy-relevant thresholds.** Total external debt is projected to gradually increase starting in 2014, reaching 38 percent of GDP over the longer term. Similarly, PPG external debt is projected to rise to 34½ percent of GDP. In present value (PV) terms all key indicators of sustainability – the GDP, revenue, and export ratios of PPG external debt and PPG external debt service – remain well below the indicative thresholds (Figure 1).<sup>3</sup>

4. **Sensitivity analysis suggests that the Solomon Islands' debt path is vulnerable to shocks to net non-debt-creating flows and financing terms (Table 1b, and Figure 1).** A shock to non-debt-creating flows lowers the net current transfers and net FDI 2014-15 to one standard deviation below the historical average.<sup>4</sup> Such a shock would lead the PV of PPG external debt to exports to breach the threshold during 2028-2033. A permanent shock to financing terms is defined as an interest rate that is 2 percentage points higher during 2013-33 than in the baseline. Such a shock would keep the PV of PPG external-debt-to-GDP ratio above the threshold starting in 2032 and the PV of PPG external-debt-to-exports ratio starting 2028.

<sup>3</sup> The negative residuals in Table 1a reflect the fact that part of the current account deficit is being financed through the aid in kind for capital projects from donors. These inflows are reflected in the capital account but are not captured in the identified net debt-creating flows, which only correct for FDI inflows. The positive residuals in Table 2a reflect the assumption that mineral revenue expected in coming years will be saved in a special fund to support health, education, and infrastructure.

<sup>4</sup> The historical (10-year) averages of foreign aid and FDI are 15 percent and 11¼ percent of GDP, respectively, while the standard deviations of these flows are 8½ percent and 10½ percent of GDP, respectively. The template does not capture the decline in imports that the shock may induce.

## B. Public Debt Sustainability Analysis

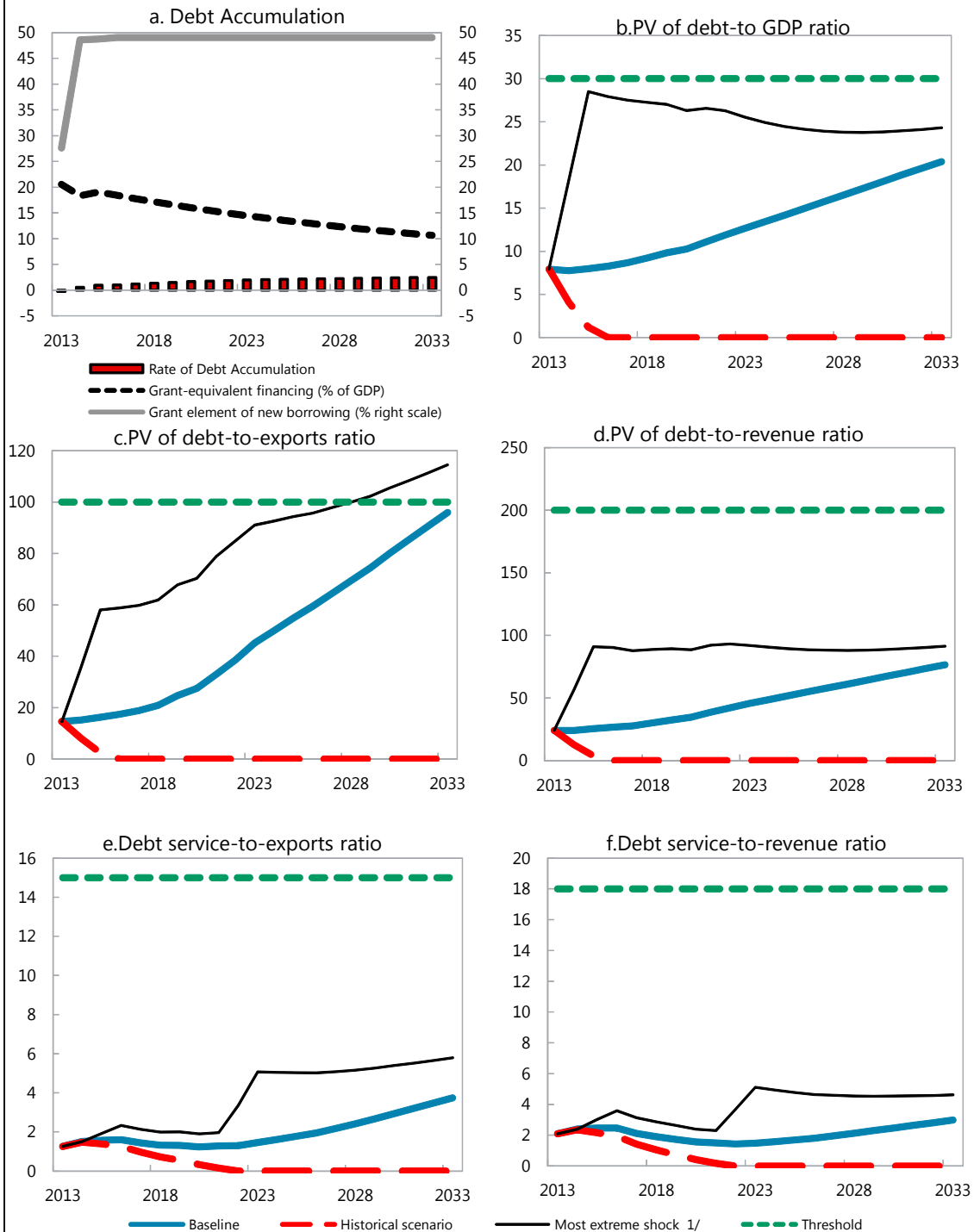
5. **Public debt analysis paints a similar picture.** Under the baseline scenario (Table 2a), the PV of total public debt will decline further to about 11 percent of GDP over the medium term. Over the longer term, it is projected to increase to about 22 percent, driven by new external borrowing after the completion of the HCA review. Public debt sustainability is vulnerable to shocks as well. Under the most extreme stress test scenario—permanently lower GDP growth—the PV of debt reaches about 30 percent of GDP by 2026 and 50 percent of GDP by 2033 (Table 2b and Figure 2).

## CONCLUSIONS

6. **The Solomon Islands continues to face a moderate risk of debt distress, in line with the conclusion of the 2012 DSA.** The baseline scenario does not indicate a breach of thresholds. However, alternative scenarios and stress tests result in a significant rise in debt indicators over the projection period, nearing thresholds on PV of PPG external debt in percent of GDP and breaching the thresholds on PV of PPG external debt in percent of exports. The shock scenarios underscore the importance of caution in external borrowing and of structural reform measures to broaden the export base in a country that is heavily reliant on imports, foreign aid, and foreign direct investment.

7. **The authorities have broadly agreed with this assessment.** They are fully committed to strengthening their public finance management framework by developing the implementing regulations for the Public Finance Act (PFA). A new resource taxation regime that the authorities are working on is expected to help attract foreign investment. The authorities will further strengthen the debt management capacity by developing on-lending and guarantees instructions.

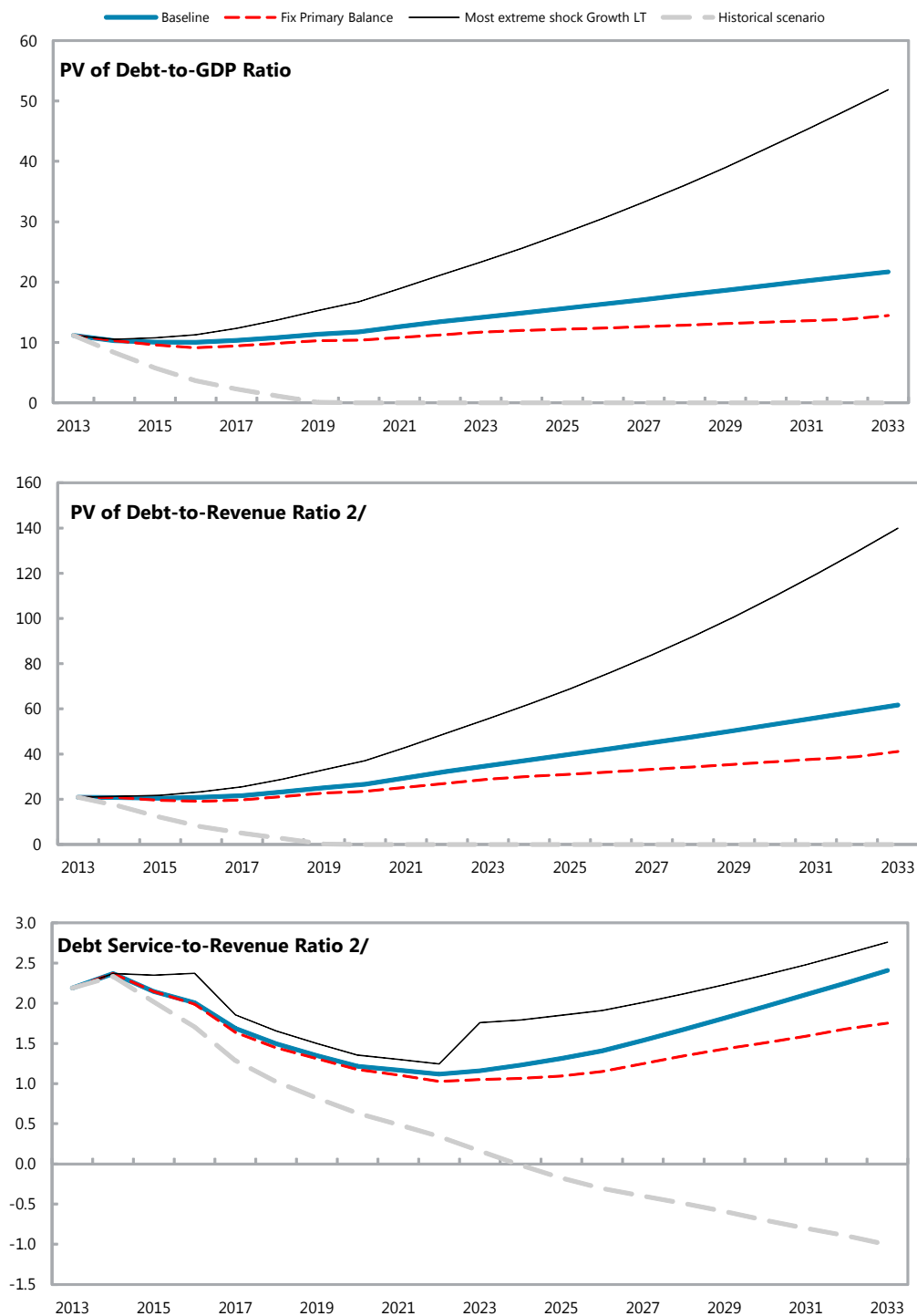
**Figure 1. Solomon Islands: Indicators of Public and Publicly Guaranteed External Debt under Alternatives Scenarios, 2013-33 1/**



Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in 2022. In all figures, it corresponds to a non-debt flows shock.

**Figure 2. Solomon Islands: Indicators of Public Debt Under Alternative Scenarios, 2013-33 1/**



Sources: Country authorities; and staff estimates and projections.  
 1/ The most extreme stress test is the test that yields the highest ratio in 2023.  
 2/ Revenues are defined inclusive of grants.

**Table 1a.: External Debt Sustainability Framework, Baseline Scenario, 2010-2033 1/**  
(In percent of GDP, unless otherwise indicated)

	Actual			Historical Average	Standard Deviation	Projections						2013-2018		2019-2033	
	2010	2011	2012			2013	2014	2015	2016	2017	2018	Average	2023	2033	Average
<b>External debt (nominal) 1/</b>	<b>31.9</b>	<b>25.1</b>	<b>21.9</b>			<b>20.6</b>	<b>23.0</b>	<b>24.1</b>	<b>25.2</b>	<b>26.3</b>	<b>27.6</b>		<b>29.7</b>	<b>38.1</b>	
<i>of which: public and publicly guaranteed (PPG)</i>	19.8	15.2	13.0			11.4	11.5	12.4	13.4	14.5	15.7		21.9	34.4	
Change in external debt	-0.5	-6.8	-3.2			-1.3	2.4	1.1	1.1	1.1	1.3		0.6	0.9	
Identified net debt-creating flows	-7.7	-16.4	-10.1			-0.8	2.9	2.5	2.7	2.7	3.0		3.6	3.3	
<b>Non-interest current account deficit</b>	<b>30.2</b>	<b>6.1</b>	<b>-0.8</b>	<b>7.9</b>	<b>14.3</b>	<b>3.7</b>	<b>12.5</b>	<b>11.7</b>	<b>11.2</b>	<b>10.0</b>	<b>9.7</b>		<b>10.4</b>	<b>9.7</b>	9.8
Deficit in balance of goods and services	31.9	6.2	1.6			10.0	15.4	14.4	13.3	12.9	12.4		16.2	12.2	
Exports	48.4	64.1	63.5			54.5	50.9	49.1	47.5	46.0	44.1		28.0	21.3	
Imports	80.4	70.2	65.1			64.6	66.3	63.5	60.7	58.9	56.5		44.3	33.5	
Net current transfers (negative = inflow)	-26.5	-20.0	-12.0	-14.9	8.4	-18.2	-17.6	-18.1	-17.5	-16.9	-16.3		-13.7	-9.7	-12.5
<i>of which: official</i>	-24.8	-18.9	-11.1			-15.9	-15.3	-15.8	-15.1	-14.5	-13.9		-11.4	-7.6	
Other current account flows (negative = net inflow)	24.8	19.9	9.7			11.9	14.7	15.5	15.5	13.9	13.6		7.9	7.1	
<b>Net FDI (negative = inflow)</b>	<b>-34.6</b>	<b>-16.2</b>	<b>-6.6</b>	<b>-11.3</b>	<b>10.4</b>	<b>-4.5</b>	<b>-9.3</b>	<b>-9.1</b>	<b>-8.4</b>	<b>-7.2</b>	<b>-6.5</b>		<b>-6.4</b>	<b>-5.6</b>	-5.7
<b>Endogenous debt dynamics 2/</b>	<b>-3.3</b>	<b>-6.2</b>	<b>-2.7</b>			<b>-0.1</b>	<b>-0.2</b>	<b>-0.1</b>	<b>-0.1</b>	<b>-0.1</b>	<b>-0.2</b>		<b>-0.4</b>	<b>-0.7</b>	
Contribution from nominal interest rate	0.7	0.7	0.6			0.5	0.5	0.6	0.7	0.7	0.7		0.6	0.5	
Contribution from real GDP growth	-2.2	-2.7	-1.1			-0.6	-0.8	-0.8	-0.8	-0.8	-0.9		-1.0	-1.2	
Contribution from price and exchange rate changes	-1.8	-4.2	-2.2			...	...	...	...	...	...		...	...	
<b>Residual (3-4) 3/</b>	<b>7.2</b>	<b>9.5</b>	<b>6.9</b>			<b>-0.5</b>	<b>-0.5</b>	<b>-1.4</b>	<b>-1.6</b>	<b>-1.6</b>	<b>-1.7</b>		<b>-3.0</b>	<b>-2.4</b>	
<i>of which: exceptional financing</i>	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/	...	...	17.9			17.2	19.2	19.6	20.1	20.5	21.1		20.5	24.1	
In percent of exports	...	...	28.1			31.5	37.8	40.0	42.3	44.5	47.9		73.1	113.3	
<b>PV of PPG external debt</b>	<b>...</b>	<b>...</b>	<b>9.0</b>			<b>7.9</b>	<b>7.7</b>	<b>8.0</b>	<b>8.3</b>	<b>8.7</b>	<b>9.2</b>		<b>12.7</b>	<b>20.4</b>	
<b>In percent of exports</b>	<b>...</b>	<b>...</b>	<b>14.1</b>			<b>14.6</b>	<b>15.2</b>	<b>16.2</b>	<b>17.4</b>	<b>18.9</b>	<b>20.9</b>		<b>45.2</b>	<b>95.9</b>	
<b>In percent of government revenues</b>	<b>...</b>	<b>...</b>	<b>26.0</b>			<b>24.1</b>	<b>24.1</b>	<b>25.4</b>	<b>26.7</b>	<b>27.7</b>	<b>30.0</b>		<b>45.7</b>	<b>76.5</b>	
<b>Debt service-to-exports ratio (in percent)</b>	<b>4.7</b>	<b>2.5</b>	<b>2.4</b>			<b>2.5</b>	<b>2.8</b>	<b>3.4</b>	<b>3.5</b>	<b>3.3</b>	<b>3.2</b>		<b>3.5</b>	<b>5.1</b>	
<b>PPG debt service-to-exports ratio (in percent)</b>	<b>3.0</b>	<b>1.2</b>	<b>1.3</b>			<b>1.3</b>	<b>1.5</b>	<b>1.6</b>	<b>1.6</b>	<b>1.4</b>	<b>1.3</b>		<b>1.5</b>	<b>3.7</b>	
<b>PPG debt service-to-revenue ratio (in percent)</b>	<b>4.5</b>	<b>2.4</b>	<b>2.4</b>			<b>2.1</b>	<b>2.4</b>	<b>2.5</b>	<b>2.5</b>	<b>2.1</b>	<b>1.9</b>		<b>1.5</b>	<b>3.0</b>	
Total gross financing need (Billions of U.S. dollars)	0.0	-0.1	-0.1			0.0	0.1	0.1	0.1	0.1	0.1		0.1	0.3	
Non-interest current account deficit that stabilizes debt ratio	30.7	12.9	2.4			5.0	10.1	10.6	10.1	8.9	8.4		9.8	8.7	
<b>Key macroeconomic assumptions</b>															
Real GDP growth (in percent)	7.8	10.7	4.9	6.4	4.7	2.9	4.0	3.6	3.4	3.5	3.6	3.5	3.6	3.6	3.4
GDP deflator in US dollar terms (change in percent)	5.7	15.1	9.8	5.5	6.2	6.5	5.7	5.4	5.2	5.0	5.0	5.5	5.8	4.6	5.5
Effective interest rate (percent) 5/	2.3	2.6	2.6	2.4	0.5	2.7	2.8	3.1	3.0	2.9	2.9	2.9	2.2	1.5	2.0
Growth of exports of G&S (US dollar terms, in percent)	40.6	68.5	14.1	25.6	21.4	-5.8	2.7	5.3	5.1	5.4	4.2	2.8	-0.7	6.4	4.0
Growth of imports of G&S (US dollar terms, in percent)	59.2	11.4	6.7	25.6	26.2	8.8	12.9	4.6	4.0	5.5	4.2	6.7	4.6	6.3	5.4
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	27.6	48.6	48.8	49.1	49.1	49.1	45.4	49.1	49.1	49.1
Government revenues (excluding grants, in percent of GDP)	32.0	33.1	34.5			32.9	32.1	31.4	30.9	31.4	30.7		27.7	26.6	27.7
Aid flows (in Billions of US dollars) 7/	0.3	0.4	0.2			0.2	0.2	0.3	0.3	0.3	0.3		0.4	0.8	
<i>of which: Grants</i>	0.2	0.2	0.2			0.2	0.2	0.2	0.2	0.3	0.3		0.3	0.5	
<i>of which: Concessional loans</i>	0.1	0.1	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.1	0.3	
Grant-equivalent financing (in percent of GDP) 8/	...	...	...			20.5	18.3	19.1	18.4	17.8	17.1		14.5	10.6	13.3
Grant-equivalent financing (in percent of external financing) 8/	...	...	...			99.9	95.1	93.6	93.3	92.8	92.3		89.7	83.1	87.7
<b>Memorandum items:</b>															
Nominal GDP (Billions of US dollars)	0.7	0.9	1.0			1.1	1.2	1.3	1.4	1.6	1.7		2.7	6.3	
Nominal dollar GDP growth	14.0	27.4	15.1			9.7	9.9	9.2	8.8	8.7	8.8	9.2	9.6	8.4	9.1
PV of PPG external debt (in Billions of US dollars)	...	...	0.1			0.1	0.1	0.1	0.1	0.1	0.2		0.3	1.3	
(PVT-PVT-1)/GDPT-1 (in percent)	...	...	...			-0.3	0.6	1.0	1.0	1.2	1.3	0.8	2.0	2.5	2.1
Gross workers' remittances (Billions of US dollars)	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
PV of PPG external debt (in percent of GDP + remittances)	...	...	9.0			7.9	7.7	8.0	8.3	8.7	9.2		12.7	20.4	
PV of PPG external debt (in percent of exports + remittances)	...	...	14.1			14.6	15.2	16.2	17.4	18.9	20.9		45.2	95.9	
Debt service of PPG external debt (in percent of exports + remittances)	...	...	1.3			1.3	1.5	1.6	1.6	1.4	1.3		1.5	3.7	

Sources: Country authorities; and staff estimates and projections.

1/ Includes both public and private sector external debt.

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

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

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

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

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

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

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

Table 1b. Solomon Islands: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2013-33

(In percent)

	Projections												
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2033	
<b>PV of debt-to GDP ratio</b>													
<b>Baseline</b>	8	8	8	8	9	9	10	10	11	12	<b>13</b>	20	
<b>A. Alternative Scenarios</b>													
A1. Key variables at their historical averages in 2013-2033 1/	8	4	1	0	0	0	0	0	0	0	0	0	
A2. New public sector loans on less favorable terms in 2013-2033 2	8	8	9	10	11	12	13	14	16	17	<b>18</b>	31	
<b>B. Bound Tests</b>													
B1. Real GDP growth at historical average minus one standard deviation in 2014-2015	8	8	8	9	9	10	10	11	12	12	<b>13</b>	21	
B2. Export value growth at historical average minus one standard deviation in 2014-2015 3/	8	7	8	8	8	9	9	10	11	12	<b>12</b>	20	
B3. US dollar GDP deflator at historical average minus one standard deviation in 2014-2015	8	8	9	9	10	10	11	12	13	13	<b>14</b>	23	
B4. Net non-debt creating flows at historical average minus one standard deviation in 2014-2015 4/	8	18	29	28	28	27	27	26	27	26	<b>26</b>	24	
B5. Combination of B1-B4 using one-half standard deviation shocks	8	11	11	11	12	12	13	13	14	15	<b>15</b>	22	
B6. One-time 30 percent nominal depreciation relative to the baseline in 2014 5/	8	11	11	12	12	13	14	14	16	17	<b>18</b>	28	
<b>PV of debt-to-exports ratio</b>													
<b>Baseline</b>	15	15	16	17	19	21	25	27	33	39	<b>45</b>	96	
<b>A. Alternative Scenarios</b>													
A1. Key variables at their historical averages in 2013-2033 1/	15	8	2	0	0	0	0	0	0	0	0	0	
A2. New public sector loans on less favorable terms in 2013-2033 2	15	16	19	21	24	28	34	38	47	55	<b>65</b>	148	
<b>B. Bound Tests</b>													
B1. Real GDP growth at historical average minus one standard deviation in 2014-2015	15	15	16	17	19	21	25	27	33	39	<b>45</b>	96	
B2. Export value growth at historical average minus one standard deviation in 2014-2015 3/	15	14	15	16	18	20	24	26	32	37	<b>44</b>	95	
B3. US dollar GDP deflator at historical average minus one standard deviation in 2014-2015	15	15	16	17	19	21	25	27	33	39	<b>45</b>	96	
B4. Net non-debt creating flows at historical average minus one standard deviation in 2014-2015 4/	15	36	58	59	60	62	68	70	79	85	<b>91</b>	114	
B5. Combination of B1-B4 using one-half standard deviation shocks	15	18	18	19	20	22	25	27	32	36	<b>42</b>	81	
B6. One-time 30 percent nominal depreciation relative to the baseline in 2014 5/	15	15	16	17	19	21	25	27	33	39	<b>45</b>	96	
<b>PV of debt-to-revenue ratio</b>													
<b>Baseline</b>	24	24	25	27	28	30	32	35	39	42	<b>46</b>	77	
<b>A. Alternative Scenarios</b>													
A1. Key variables at their historical averages in 2013-2033 1/	24	13	4	0	0	0	0	0	0	0	0	0	
A2. New public sector loans on less favorable terms in 2013-2033 2	24	26	29	33	36	40	44	48	54	60	<b>66</b>	118	
<b>B. Bound Tests</b>													
B1. Real GDP growth at historical average minus one standard deviation in 2014-2015	24	25	27	28	29	31	34	36	40	44	<b>48</b>	80	
B2. Export value growth at historical average minus one standard deviation in 2014-2015 3/	24	23	24	25	26	29	31	33	37	41	<b>45</b>	76	
B3. US dollar GDP deflator at historical average minus one standard deviation in 2014-2015	24	26	29	30	31	34	37	39	44	48	<b>52</b>	87	
B4. Net non-debt creating flows at historical average minus one standard deviation in 2014-2015 4/	24	57	91	90	88	89	89	89	92	93	<b>92</b>	91	
B5. Combination of B1-B4 using one-half standard deviation shocks	24	33	36	37	38	40	42	44	48	52	<b>55</b>	83	
B6. One-time 30 percent nominal depreciation relative to the baseline in 2014 5/	24	34	36	37	39	42	45	48	54	59	<b>64</b>	107	



**Table 1b. Solomon Islands: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2013-33 (concluded)**

(In percent)

**Debt service-to-exports ratio**

<b>Baseline</b>	1	2	2	2	1	1	1	1	1	1	1	4
<b>A. Alternative Scenarios</b>												
A1. Key variables at their historical averages in 2013-2033 1/	1	1	1	1	1	1	1	0	0	0	0	0
A2. New public sector loans on less favorable terms in 2013-2033 2	1	2	2	2	2	2	2	2	3	3	4	8
<b>B. Bound Tests</b>												
B1. Real GDP growth at historical average minus one standard deviation in 2014-2015	1	2	2	2	1	1	1	1	1	1	1	4
B2. Export value growth at historical average minus one standard deviation in 2014-2015 3/	1	1	2	2	1	1	1	1	1	1	1	4
B3. US dollar GDP deflator at historical average minus one standard deviation in 2014-2015	1	2	2	2	1	1	1	1	1	1	1	4
B4. Net non-debt creating flows at historical average minus one standard deviation in 2014-2015 4/	1	2	2	2	2	2	2	2	2	3	5	6
B5. Combination of B1-B4 using one-half standard deviation shocks	1	1	1	1	1	1	1	1	1	1	2	3
B6. One-time 30 percent nominal depreciation relative to the baseline in 2014 5/	1	2	2	2	1	1	1	1	1	1	1	4

**Debt service-to-revenue ratio**

<b>Baseline</b>	2	2	2	2	2	2	2	2	1	1	1	3
<b>A. Alternative Scenarios</b>												
A1. Key variables at their historical averages in 2013-2033 1/	2	2	2	2	1	1	1	0	0	0	0	0
A2. New public sector loans on less favorable terms in 2013-2033 2	2	2	3	3	2	2	3	3	3	3	4	6
<b>B. Bound Tests</b>												
B1. Real GDP growth at historical average minus one standard deviation in 2014-2015	2	2	3	3	2	2	2	2	2	1	2	3
B2. Export value growth at historical average minus one standard deviation in 2014-2015 3/	2	2	2	2	2	2	2	2	1	1	1	3
B3. US dollar GDP deflator at historical average minus one standard deviation in 2014-2015	2	3	3	3	2	2	2	2	2	2	2	3
B4. Net non-debt creating flows at historical average minus one standard deviation in 2014-2015 4/	2	2	3	4	3	3	3	2	2	4	5	5
B5. Combination of B1-B4 using one-half standard deviation shocks	2	2	3	3	2	2	2	2	2	2	2	3
B6. One-time 30 percent nominal depreciation relative to the baseline in 2014 5/	2	3	3	3	3	3	2	2	2	2	2	4

*Memorandum item:*

Grant element assumed on residual financing (i.e., financing required above baseline) 6/	47	47	47	47	47	47	47	47	47	47	47	47
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Sources: Country authorities; and staff estimates and projections.

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

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

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

4/ Includes official and private transfers and FDI.

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

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

Table 2a. Solomon Islands: Public Sector Debt Sustainability Framework, Baseline Scenario, 2010-33

(In percent of GDP, unless otherwise indicated)

	Actual			Average <sup>5/</sup>	Standard Deviation <sup>5/</sup>	Estimate					Projections				
	2010	2011	2012			2013	2014	2015	2016	2017	2018	2013-18 Average	2023	2033	2019-33 Average
<b>Public sector debt 1/</b>	27.8	21.6	17.5			14.6	14.1	14.5	15.2	16.1	17.3		23.4	35.7	
<i>of which: foreign-currency denominated</i>	19.8	15.2	13.0			11.4	11.5	12.4	13.4	14.5	15.7		21.9	34.4	
Change in public sector debt	-5.4	-6.2	-4.1			-2.9	-0.6	0.5	0.6	1.0	1.1		1.2	1.2	
Identified debt-creating flows	-10.4	-15.4	-6.0			-1.8	-1.6	-0.5	-0.7	-1.4	-1.4		-1.4	-1.9	
Primary deficit	-6.7	-9.3	-4.2	-3.7	3.5	-0.5	-0.5	0.5	0.3	-0.3	-0.3	-0.1	0.3	0.4	0.7
Revenue and grants	62.6	60.3	53.7			53.5	49.6	49.2	48.0	47.8	46.5		40.6	35.2	
<i>of which: grants</i>	30.7	27.1	19.2			20.5	17.4	17.8	17.1	16.4	15.8		12.9	8.6	
Primary (noninterest) expenditure	56.0	51.0	49.5			53.0	49.1	49.7	48.4	47.5	46.2		40.9	35.6	
Automatic debt dynamics	-3.7	-5.9	-1.9			-1.3	-1.1	-1.0	-1.0	-1.0	-1.1		-1.7	-2.3	
Contribution from interest rate/growth differential	-2.7	-3.2	-1.3			-0.7	-0.7	-0.6	-0.6	-0.6	-0.7		-0.9	-1.4	
<i>of which: contribution from average real interest rate</i>	-0.3	-0.5	-0.3			-0.2	-0.1	-0.1	-0.1	-0.1	-0.1		-0.1	-0.2	
<i>of which: contribution from real GDP growth</i>	-2.4	-2.7	-1.0			-0.5	-0.6	-0.5	-0.5	-0.5	-0.6		-0.8	-1.2	
Contribution from real exchange rate depreciation	-1.0	-2.8	-0.6			-0.6	-0.4	-0.4	-0.4	-0.4	-0.5		...	...	
Other identified debt-creating flows	0.0	-0.1	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Privatization receipts (negative)	0.0	-0.1	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Recognition of implicit or contingent liabilities	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Debt relief (HIPC and other)	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Other (specify, e.g. bank recapitalization)	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Residual, including asset changes	5.0	9.2	1.9			-1.1	1.1	1.0	1.3	2.4	2.5		2.6	3.1	
<b>Other Sustainability Indicators</b>															
<b>PV of public sector debt</b>	...	...	13.5			11.2	10.3	10.1	10.0	10.4	10.8		14.2	21.7	
<i>of which: foreign-currency denominated</i>	...	...	9.0			7.9	7.7	8.0	8.3	8.7	9.2		12.7	20.4	
<i>of which: external</i>	...	...	9.0			7.9	7.7	8.0	8.3	8.7	9.2		12.7	20.4	
PV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...	
Gross financing need 2/	-4.1	-7.3	-1.8			1.2	1.2	2.0	1.9	1.0	1.1		1.3	1.5	
PV of public sector debt-to-revenue and grants ratio (in percent)	...	...	25.1			20.9	20.8	20.5	20.9	21.7	23.3		34.9	61.7	
PV of public sector debt-to-revenue ratio (in percent)	...	...	39.0			33.9	32.0	32.1	32.5	33.0	35.2		51.0	81.5	
<i>of which: external 3/</i>	...	...	26.0			24.1	24.1	25.4	26.7	27.7	30.0		45.7	76.5	
Debt service-to-revenue and grants ratio (in percent) 4/	3.2	2.4	3.4			2.2	2.4	2.1	2.0	1.7	1.5		1.2	2.4	
Debt service-to-revenue ratio (in percent) 4/	6.3	4.3	5.3			3.6	3.7	3.4	3.1	2.6	2.3		1.7	3.2	
Primary deficit that stabilizes the debt-to-GDP ratio	-1.2	-3.1	-0.1			2.4	0.1	0.0	-0.3	-1.3	-1.4		-1.0	-0.8	
<b>Key macroeconomic and fiscal assumptions</b>															
Real GDP growth (in percent)	7.8	10.7	4.9	6.4	4.7	2.9	4.0	3.6	3.4	3.5	3.6	3.5	3.6	3.6	3.4
Average nominal interest rate on forex debt (in percent)	1.2	1.1	1.1	1.4	0.5	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Average real interest rate on domestic debt (in percent)	-3.8	-6.8	-3.6	-4.0	2.4	-4.1	-3.4	-3.2	-2.9	-2.8	-2.6	-3.2	-2.2	-0.3	-1.7
Real exchange rate depreciation (in percent, + indicates depreciation)	-4.6	-15.4	-4.3	-4.0	4.6	-4.8	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	5.9	9.1	5.7	6.3	2.8	5.8	5.6	5.4	5.2	5.0	5.0	5.3	5.8	4.6	5.5
Growth of real primary spending (deflated by GDP deflator, in percent)	0.1	0.0	0.0	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Grant element of new external borrowing (in percent)	...	...	...	...	...	27.6	48.6	48.8	49.1	49.1	49.1	45.4	49.1	49.1	...

Sources: Country authorities; and staff estimates and projections.

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

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

3/ Revenues excluding grants.

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

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

Table 2b. Solomon Islands: Sensitivity Analysis for Key Indicators of Public Debt 2013-33

	Projections							
	2013	2014	2015	2016	2017	2018	2023	2033
<b>PV of Debt-to-GDP Ratio</b>								
<b>Baseline</b>	11	10	10	10	10	11	14	22
<b>A. Alternative scenarios</b>								
A1. Real GDP growth and primary balance are at historical averages	11	8	6	4	2	1	0	0
A2. Primary balance is unchanged from 2013	11	10	10	9	9	10	12	14
A3. Permanently lower GDP growth 1/	11	11	11	11	12	14	23	52
<b>B. Bound tests</b>								
B1. Real GDP growth is at historical average minus one standard deviations in 2014-2015	11	11	12	12	13	14	20	30
B2. Primary balance is at historical average minus one standard deviations in 2014-2015	11	10	10	10	10	11	14	22
B3. Combination of B1-B2 using one half standard deviation shocks	11	10	8	8	8	9	12	20
B4. One-time 30 percent real depreciation in 2014	11	13	12	11	11	11	12	17
B5. 10 percent of GDP increase in other debt-creating flows in 2014	11	16	15	15	15	15	17	23
<b>PV of Debt-to-Revenue Ratio 2/</b>								
<b>Baseline</b>	21	21	20	21	22	23	35	62
<b>A. Alternative scenarios</b>								
A1. Real GDP growth and primary balance are at historical averages	21	17	12	8	5	3	0	0
A2. Primary balance is unchanged from 2013	21	21	19	19	20	21	29	41
A3. Permanently lower GDP growth 1/	21	21	22	23	25	29	56	140
<b>B. Bound tests</b>								
B1. Real GDP growth is at historical average minus one standard deviations in 2014-2015	21	22	23	25	27	30	48	85
B2. Primary balance is at historical average minus one standard deviations in 2014-2015	21	21	20	20	21	23	34	61
B3. Combination of B1-B2 using one half standard deviation shocks	21	19	16	17	17	19	30	58
B4. One-time 30 percent real depreciation in 2014	21	26	25	24	23	24	30	47
B5. 10 percent of GDP increase in other debt-creating flows in 2014	21	31	31	31	31	33	43	66
<b>Debt Service-to-Revenue Ratio 2/</b>								
<b>Baseline</b>	2	2	2	2	2	1	1	2
<b>A. Alternative scenarios</b>								
A1. Real GDP growth and primary balance are at historical averages	2	2	2	2	1	1	0	-1
A2. Primary balance is unchanged from 2013	2	2	2	2	2	1	1	2
A3. Permanently lower GDP growth 1/	2	2	2	2	2	2	2	5
<b>B. Bound tests</b>								
B1. Real GDP growth is at historical average minus one standard deviations in 2014-2015	2	2	2	2	2	2	1	3
B2. Primary balance is at historical average minus one standard deviations in 2014-2015	2	2	2	2	2	1	1	2
B3. Combination of B1-B2 using one half standard deviation shocks	2	2	2	2	2	1	1	2
B4. One-time 30 percent real depreciation in 2014	2	3	3	3	2	2	2	4
B5. 10 percent of GDP increase in other debt-creating flows in 2014	2	2	2	2	2	2	2	3
Sources: Country authorities; and staff estimates and projections.								
1/ Assumes that real GDP growth is at baseline minus one standard deviation divided by the square root of the length of the projection period.								
2/ Revenues are defined inclusive of grants.								