

REPUBLIC OF THE MARSHALL ISLANDS

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STAFF REPORT FOR THE 2018 ARTICLE IV CONSULTATION—DEBT SUSTAINABILITYANALYSIS

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Prepared by the staffs of the International Monetary Fund (IMF) and the International Development Association (IDA)¹

The 2018 Debt Sustainability Analysis (DSA) assesses that the Republic of the Marshall Islands (RMI) remains at high risk of debt distress. The ratios of the present value (PV) of external public and publicly-guaranteed (PPG) debt to GDP and to exports are currently just below their respective policy-dependent indicative thresholds. The PV of the PPG debt-to-GDP ratio is expected to decline slightly in the near term, but to start increasing and exceed its indicative threshold in the medium to long term. Stress tests confirm the vulnerability of the debt position to lending terms as well as macroeconomic shocks. Although the RMI does not currently face debt servicing risks, helped by government revenue from fishing licenses and a stable flow of funds from the U.S. Compact grants until FY2023, a lack of fiscal buffers after FY2023 and risks from contingent liabilities call for a fiscal reform strategy. Containing the risk of debt distress requires continuation of grants to support the country's large development needs, and implementation of fiscal and structural reforms to promote fiscal sustainability and growth.

¹ This DSA was prepared jointly with the World Bank, in accordance with the standard Debt Sustainability Framework for Low-income Countries approved by the Executive Boards of the IMF and the IDA (This DSA was prepared prior to July 1, 2018 based on the 2013 staff guidance note). Debt sustainability is assessed in relation to policy-dependent debt burden thresholds. The RMI, with an average Country Policy and Institutional Assessment (CPIA) score of 2.6 over the last three years, is considered to have weak policy and institutional capacity for the purposes of the DSA framework, and assessed against relatively lower debt thresholds. Thus, the external debt burden thresholds for the RMI are: (i) PV of debt-to-GDP ratio: 30 percent; (ii) PV of debt-to-exports ratio: 100 percent; (iii) PV of debt-to-revenue ratio: 200 percent; (iv) debt service-toexports ratio: 15 percent; and (v) debt service-to-revenue ratio: 18 percent.

BACKGROUND

1. The RMI's external public and publicly guaranteed (PPG) debt has been on a downward trajectory since the early 2000s. It declined from 74 percent of GDP in FY2002 to 38 percent in FY2017.² About two-thirds of outstanding debt is central government debt contracted with the Asian Development Bank (ADB), while the rest is state-owned enterprise (SOE) debt guaranteed by the government. Total debt service amounts to US\$7 million in FY2018, and remains broadly stable over the medium term. All loans will be redeemed in U.S. dollars, the legal tender and official currency of the RMI. The private sector accounts for about 6 percent of total external debt.

2. RMI faces a long-term fiscal challenge as some U.S. grants provided under the Compact of Free Association (Compact grants) will expire in FY2023. RMI is dependent on external grants and fishing license fees to finance public spending. A portion of the Compact grants has been disbursed into the Compact Trust Fund (CTF), jointly managed by the United States and the RMI, with the goal that investment earnings from the CTF could replace the expiring portion of the U.S. Compact grants after FY2023. Nevertheless, the current trajectory of the CTF is not on track to preserve the *real* value of the CTF (with about 2 percent inflation adjustment), highlighting the risk of widening financial gaps.

UNDERLYING ASSUMPTIONS

3. Key assumptions are consistent with the macroeconomic framework based on updated data provided by the authorities and estimates by staff. Relative to the previous DSA, the outlook for real GDP growth has been revised up moderately, reflecting a recent resumption of capital investment with gradual expansion in domestic absorption. Also, the view for near- to medium-term fiscal indicators has moderately improved mainly due to the upward revision of fiscal revenues (notably further increases in fishing license fees). Regarding external finance, projected support from IDA has also been revised upward, reflecting IDA's planned scale-up for Pacific Island countries. However, the long-term fiscal challenge of the reduction of the U.S. Compact grants after FY2023 remains largely unchanged.

- a. **Real GDP growth** in the long run is projected to register 1.5 percent, which incorporates the potential effects of natural disasters on growth (see section following). The GDP deflator is expected to stabilize at around 1 percent in the long run.
- b. **The overall fiscal surplus** is expected to decline gradually and turn into a deficit of 1.3 percent of GDP by FY2023, when the U.S. Compact grants expire. On the revenue side, Compact grants in real terms are projected to decrease as scheduled. Grants from other donors as well as fishing license fees are assumed to be stable in nominal terms, while declining as a share of GDP. The tax revenue-to-GDP ratio is assumed to remain broadly unchanged, as the baseline scenario does not incorporate tax reforms. Beyond FY2023, investment earnings from the CTF are intended to replace the expiring portion of the U.S. Compact grants. While the projected value of CTF would generate sufficient income to supplement the expired Compact grants

² Fiscal year ending September 30.

(US\$27 million), long-term self-sufficiency will not be secured because the real value of the CTF will decline over time. Total expenditure recorded a peak at 65 percent of GDP in FY2017 and is projected to remain high at around 62–65 percent of GDP until FY2023 as the authorities' high priority projects will be accelerated through financial support from IDA and ADB. Beyond FY2023, expenditures are expected to follow trends in revenues and grants—total expenditure is projected to decrease to 58 percent of GDP in FY2033 as grants and fishing license fees are expected to decline in percent of GDP.

- c. **The current account deficit** (including official current transfers) is also expected to worsen gradually from 0.3 percent of GDP in FY2017 to 3.1 percent of GDP by FY2023, due to continued import demand for infrastructure projects while fishing license fee remains stable in nominal terms.
- d. **External financing**. In the absence of access to the international capital market and a very limited domestic market, the financing gap is assumed to be closed by a combination of bilateral loans from development partners and multilateral concessional lending. In addition, it is assumed that the additional support from IDA and ADB will be provided on credit terms (see paragraph 6 for more details).

INCORPORATING THE IMPACT OF NATURAL DISASTER

4. **RMI is one of the countries expected to be most affected by climate change.** The vulnerability arises from the exposure to rising sea levels, given its low elevation, and to natural disaster such as droughts and floods. Historical data on natural disasters from the Emergency Events Database indicate that the average likelihood of a severe natural disaster is 5.4 percent per year, with about 25 percent of total population being affected by a severe disaster event.

5. The DSA incorporates the costs and risks of natural disasters. The baseline scenario considers the impact of future natural disasters, in line with the 2016 IMF Board Paper on "Small States' Resilience to Natural Disasters and Climate Change."³ For FY2018–2023, staff's projections assume no natural disasters, in line with the guidance from the Board Paper. This ensures that adjustments for natural disasters do not complicate near-term policy discussions. However, for a realistic assumption over the longer horizon, the baseline projections after FY2023 take into account the average annual impact of natural disasters by adjusting downward the average growth rate. In particular, long-term growth is adjusted down by 0.1 percentage points to 1.5 percent, compared with a non-disaster potential growth rate of 1.6 percent. In addition, the near-term risk of a one-off extreme natural disaster is incorporated in the DSA through a standard customized scenario (see Figures 1 and 2). Based on Lee, Zhang and Nguyen (2018), this risk scenario assumes that a one-off extreme natural disaster would decrease real GDP growth by 2 percentage

³ The 2016 Board Paper is available at: <u>https://www.imf.org/en/News/Articles/2016/12/12/PR16550-IMF-Discusses-</u> Small-States-Resilience-to-Natural-Disasters-and-Climate-Change-and-IMF-Role.

points, and increase the trade deficit and public expenditure by 5 percent of GDP respectively in the near term.⁴

EXTERNAL DEBT SUSTAINABILITY ANALYSIS

6. Under the baseline scenario, RMI's PPG external debt trajectory is projected to exceed the indicative threshold in the medium to long term. The PV of external debt-to-GDP ratio is expected to ease in the near term following the recent downward trajectory. However, it is expected to start increasing and to exceed the threshold of 30 percent from FY2022 (Figure 1). The ratio of the PV of external debt-to-

exports is also expected to increase and remain above the threshold of 100 percent during most of the projection period. As the bulk of external debt is on concessional terms, debt service will be relatively contained. Nonetheless, the debt service-to-exports ratio will gradually approach the indicative threshold by the end of the projection period because of continued debt accumulation. Alternatively, if the RMI continues to benefit from its grant-only status, the PV of debt-to-GDP ratio will gradually decline and stay below the threshold throughout the projection period (see text chart).⁵



7. Stress tests confirm the vulnerability of debt dynamics to lending terms, export market conditions as well as macroeconomic shocks. Given continued debt accumulation in the baseline scenario, the debt trajectory is particularly sensitive to changes in the terms of new lending as shown in the most extreme shock scenario. In addition, other stress-test scenarios, including the severe natural disaster scenario, illustrate the vulnerability of the debt trajectory to external shocks.

PUBLIC DEBT SUSTAINABILITY ANALYSIS

8. Public debt follows very closely the dynamic of external debt. Under the baseline scenario, the PV of total public debt-to-GDP ratio is projected to increase from 29 percent of GDP in FY2017 to 50 percent of GDP in FY2028, exceeding the benchmark of 38 percent. A sensitivity analysis on the primary deficit—holding the annual primary surplus at the FY2018 level of 2.6 percent, relative to projected average of 0.2 percent (FY2018–FY2028) in the baseline scenario—will decrease the PV of public debt-to-GDP ratio by 13 percentage points in FY2028. This highlights that fiscal consolidation in the early years of the

⁴ Lee, Zhang and Nguyen. *The Economic Impact of Natural Disasters in Pacific Island Countries: Adaptation and Preparedness*. IMF WP/18/108.

⁵ In the IMF's macroeconomic framework, it is assumed that the RMI will continue to benefit from its grant-only status. However, in preparing the LIC-DSA, for World Bank (IDA) and other MDBs, regular credit terms on all lending is assumed for all years in the projection period for which grant finance has not already been committed. This is required as lenders link the terms of their assistance and allocation of grants to the DSF risk rating, and hence a clean assessment without possible grants is needed. Grants committed on the basis of the DSA can then be captured at the next DSA cycle.

projections will substantially improve prospects for debt sustainability. As discussed in the staff report, fiscal consolidation could be achieved through unwinding the surge in recurrent spending, improving revenue administration, and implementing growth-friendly tax reforms.

THE AUTHORITIES VIEWS

9. The authorities agreed with the DSA assessment, noting that the current risk of debt distress

is high. In addition to continued grants from bilateral donors and international financial institutions, they saw the need to build adequate fiscal buffers by FY2023 through fiscal adjustment to preserve the real value of CTF after the reduction of the U.S. compact grant. To this end, they underscored ongoing fiscal reforms, including revenue mobilization, targeted expenditure cuts, and public finance management reforms. The authorities are also seeking additional concessional loans and grants from bilateral donors and international financial institutions with a view to partly offsetting the reduction in the U.S. compact grants. In this context, the authorities also recognized the need to comply with the non-concessional borrowing policies for securing grant support from the WB and ADB.

CONCLUSION

10. The standard DSA framework for LICs suggests that the RMI is at high risk of debt distress.

The baseline scenario indicates that the PV of PPG external debt-to-GDP ratio would breach the indicative threshold during most of the projection period. Furthermore, stress tests suggest that RMI's external PPG debt trajectory could even worsen. RMI's vulnerability to debt distress is mitigated by a number of factors: the decline in external support from the Compact grants will be gradual, sheltering the country from the risk of a sudden stop in foreign financing; the government is building up the CTF that will provide a stable source of funding after FY2023; and RMI currently benefits from its grant-only status. On the other hand, vulnerabilities are exacerbated by the lack of fiscal buffers, uncertainty about prospective SOE losses, volatility in CTF investment returns, and contingent liabilities from climatic events and the social security system. Thus, the government needs to implement fiscal and structural reforms to generate sufficient fiscal surpluses by FY2023 to shore up the CTF while safeguarding social spending and economic growth.



Figure 1. Marshall Islands: Indicators of Public and Public Guaranteed External Debt



Table 1. Marshall Islands: External Debt Sustainability Framework, Baseline Scenario, 2015–38 1/

(In percent of GDP, unless otherwise indicated)

	Actual			Actual Historical ^{6/} Standard ^{6/} Projections						tions							
	2015	2016	2017	Average	Deviation	2019	2010	2020	2021	2022	2022	2018-2023	2029	2029	2024-203		
	2015	2010	2017			2010	2015	2020	2021	LULL	2025	Average	2020	2050	Average		
External debt (nominal) 1/	51.9	45.3	37.7			35.1	34.8	37.5	41.7	47.4	54.3		94.6	153.3			
of which: public and publicly guaranteed (PPG)	49.1	42.5	35.2			32.8	32.5	35.3	39.5	45.3	52.3		92.8	151.9			
Change in external debt	-1./	-6.5	-7.6			-2.6	-0.3	2.7	4.2	5.7	7.0		7.4	4.4			
Identified net debt-creating flows	-15.7	-14.0	-7.6			-2.9	-2.2	-1.2	-0.3	0.0	0.1		0.4	1.5			
Non-interest current account deficit	-16.3	-8.7	-0.6	-0.2	9.7	-0.3	0.2	1.2	1.9	2.2	2.4		3.0	4.5	3.4		
Deficit in balance of goods and services	55.5	56.3	56.5			56.2	56.2	56.3	56.3	56.1	55.9		54.6	49.7			
Exports	36.9	26.9	29.5			29.7	29.7	29.6	29.5	29.6	29.7		29.7	29.9			
Imports	92.4	83.3	86.0			86.0	85.9	85.9	85.8	85.7	85.6		84.3	/9.6			
Net current transfers (negative = inflow)	-32.2	-30.7	-26.6	-33.3	4.2	-25.4	-24.2	-22.9	-22.0	-21.4	-20.8		-12.9	-11.1	-12.4		
of which: official	-31.2	-30.0	-25.7			-24.9	-23.7	-22.5	-21.8	-21.2	-20.6		-12.9	-11.1			
Other current account flows (negative = net inflow)	-39.6	-34.3	-30.5			-31.1	-31.9	-32.3	-32.3	-32.5	-32.8		-38.7	-34.1			
Net FDI (negative = inflow)	-1.8	-2.5	-2.6	-5.5	6.4	-2.5	-2.4	-2.4	-2.3	-2.3	-2.3		-2.3	-2.3	-2.3		
Endogenous debt dynamics 2/	2.4	-2.8	-4.4			0.0	0.0	0.0	0.0	0.0	0.1		-0.3	-0.7			
Contribution from nominal interest rate	1.3	1.1	0.9			0.9	0.8	0.8	0.7	0.8	0.8		1.0	1.4			
Contribution from real GDP growth	0.3	-1.0	-1.4			-0.9	-0.8	-0.7	-0.7	-0.7	-0.7		-1.3	-2.2			
Contribution from price and exchange rate changes	0.8	-3.0	-3.9														
Residual (3-4) 3/	14.0	7.4	0.0			0.3	1.9	3.9	4.5	5.7	6.8		7.0	3.0			
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/			31.5			29.3	28.0	28.5	29.7	31.7	34.4		52.0	87.2			
In percent of exports			106.7			98.5	94.4	96.4	100.6	107.3	116.0		175.3	291.2			
PV of PPG external debt			29.0			26.9	25.7	26.3	27.6	29.6	32.4		50.2	85.7			
In percent of exports			98.4			90.6	86.7	88.9	93.4	100.2	109.2		169.2	286.5			
In percent of government revenues			75.6			86.8	84.5	87.8	93.6	102.0	112.9		135.1	254.2			
Debt service-to-exports ratio (in percent)	11.4	13.0	10.7			10.2	10.9	9.3	9.4	9.4	9.4		9.7	14.6			
PPG debt service-to-exports ratio (in percent)	11.4	13.0	10.7			10.2	10.9	9.3	9.4	9.4	9.4		9.7	14.6			
PPG debt service-to-revenue ratio (in percent)	15.3	10.9	8.2			9.8	10.6	9.2	9.4	9.5	9.7		7.8	12.9			
Total gross financing need (Millions of U.S. dollars)	-25.2	-15.0	-0.2			0.5	2.3	3.9	6.2	7.1	7.6		10.8	25.1			
Non-interest current account deficit that stabilizes debt ratio	-14.6	-2.1	7.0			2.2	0.5	-1.5	-2.2	-3.5	-4.6		-4.4	0.0			
Key macroeconomic assumptions																	
Real GDP growth (in percent)	-0.6	2.0	3.6	14	2.9	2.5	2.3	22	2.0	1.8	1.6	2.1	1.5	1.5	1.4		
GDP deflator in US dollar terms (change in percent)	-15	6.1	93	2.4	3.6	0.9	1.0	12	13	0.9	1.0	1.0	10	1.0	10		
Effective interest rate (percent) 5/	2.4	2.3	2.2	2.6	0.4	2.4	2.4	2.3	2.0	1.9	1.7	2.1	1.0	1.0	1.1		
Growth of exports of G&S (US dollar terms in percent)	-8.1	-20.9	24.1	7.8	20.7	43	3.2	3.0	3.0	29	29	3.2	2.5	2.6	25		
Growth of imports of G&S (US dollar terms, in percent)	-7.2	-2.5	17.0	4.1	9.8	3.4	3.3	3.3	3.2	2.6	2.4	3.0	1.9	1.8	1.9		
Grant element of new public sector borrowing (in percent)						43.1	50.0	50.3	513	52.1	52.5	49.9	53.7	51.2	53.0		
Government revenues (excluding grants, in percent of GDP)	27.5	32.2	38.4			31.0	30.5	29.9	29.4	29.0	28.7	15.5	37.2	33.7	36.2		
Aid flows (in Millions of US dollars) 7/	58.7	59.1	65.9			75.8	80.5	86.2	90.5	94.6	98.7		73.3	85.0			
of which: Grants	58.7	59.1	65.9			73.8	72.9	71.8	71.7	71.7	71.6		39.1	43.0			
of which: Concessional loans	0.0	0.0	0.0			2.0	7.6	14.4	18.8	22.9	27.2		34.2	42.0			
Grant-equivalent financing (in percent of GDP) 8/						32.5	32.3	32.2	32.1	32.1	32.1		19.1	16.8	18.6		
Grant-equivalent financing (in percent of external financing) 8/						98.5	95.3	91.7	89.9	88.4	86.9		78.4	75.9	78.0		
Memorandum items:																	
Nominal GDP (Millions of US dollars)	181.3	196.3	222.3			229.9	237.7	245.8	253.8	260.7	267.4		300.2	383.1			
Nominal dollar GDP growth	-2.1	8.2	13.3			3.4	3.4	3.4	3.3	2.7	2.6	3.1	2.5	2.5	2.4		
PV of PPG external debt (in Millions of US dollars)			64.6			61.9	61.2	64.6	70.0	77.2	86.6		150.8	328.5			
(PVt-PVt-1)/GDPt-1 (in percent)						-1.2	-0.3	1.4	2.2	2.9	3.6	1.4	4.8	5.1	5.1		
Gross workers' remittances (Millions of US dollars)	7.7	8.6	9.6			10.0	10.3	10.6	11.0	11.3	11.6		13.0	16.6			
PV of PPG external debt (in percent of GDP + remittances)			27.8			25.8	24.7	25.2	26.4	28.4	31.0		48.1	82.2			
PV of PPG external debt (in percent of exports + remittances)			85.8			79.1	75.6	77.5	81.4	87.4	95.2		147.6	250.3			
Debt service of PPG external debt (in percent of exports + remittance			9.3			8.9	9.5	8.1	8.2	8.2	8.2		8.5	12.7			

Sources: Country authorities; and staff estimates and projections.

1/ Includes both public and private sector external debt.

2/ Derived as [r - g - p(1+y)]/(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 2. Marshall Islands: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2018–38 (In percent)

Vol of debt- to GDP ratio 2019 2020 2021 2022 2023 2028 2018 PV of debt- to GDP ratio Rate match is described average in 2016-2038 / 27 26 28 29 21 20 19 20 19 Alternative Scientific Bl. Red LOP growth at historical average minus one standard deviation in 2019-2020 27 28 30 32 35 44 45 Bl. Red LOP growth at historical average minus one standard deviation in 2019-2020 27 24 24 25 27 30 49 88 Bl. Red LOP growth at historical average minus one standard deviation in 2019-2020 27 24 24 25 7 30		Projections									
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B2. Export value growth at historical average minus one standard deviation in 2019-2020 / 27 26 28 29 31 34 36 39 58 91 B3. US obtile COP deflator at historical average minus one standard deviation in 2019-2020 / 27 25 24 25 27 30 48 84 B5. Combination of B1-B4 using one-haft standard deviation in 2019-2020 / 27 24 24 25 27 30 49 88 B6. One-time 30 percent nominal depreciation relative to the baseline in 2019 / 27 24 24 25 27 30 49 88 B6. One-time 30 percent nominal depreciation relative to the baseline in 2019 / 2020 / 27 24 24 25 26 66 62 A. Nerrubic Scentrolas 91 91 97 70 67 65 66 62 62 62 62 62 62 62 62 62 62 62 62 62 62 62 62 66 62 62 62 62 62 62 62 62 62 62 62 62 <	B1. Real GDP growth at historical average minus one standard deviation in 2019-2020	27	27	28	30	32	35	54	92		
B.1.0.5 collar COP deflator at historical average minus one standard deviation in 2019-2020 / 27 26 82 29 31 34 93 90 B.1. Net non-debt creating flows at historical average minus one standard deviation in 2019-2020 // 27 24 24 25 27 30 48 64 B.6. One-time 30 percent nominal depreciation relative to the baseline in 2019 5// 27 37 37 39 42 46 71 122 PV of debt-to-exports ratio PV of debt-to-exports ratio Atternative Scenarios Atternative Scenarios Atternative Scenarios Atternative Scenarios Atternative Scenarios Atternative Scenarios Bold Tots 91 87 89 93 100 109 66 468 5 285 28 286 48 48 91 91 97 109 124 185 293 101 101 128 128 128 128 128 128 128 128 128 128	B2. Export value growth at historical average minus one standard deviation in 2019-2020 3/	27	28	33	34	36	39	58	91		
B4. Net non-debt creating flows at historical average minus one standard deviation in 2019-2020 4/ 27 24 24 25 27 30 48 84 B5. Combinition of B1-B4 using one methal standard deviation shocks 27 27 37 39 42 46 71 122 PV of debt-to-exports ratio Baseline 91 67 69 93 100 109 169 266 A Atternative Scenarios Atternative Scenarios B. Sector Isams on less favorable terms in 2018-2038 1/ 81 81 81 75 70 67 65 66 62 Atternative Scenarios B. Sector Isams on less favorable terms in 2018-2038 2 91 90 97 109 124 143 260 488 Severe Natural Disaster 2019 112 19 128 185 252	B3. US dollar GDP deflator at historical average minus one standard deviation in 2019-2020	27	26	28	29	31	34	53	90		
B5. Combination of B1-B4 using one-half standard deviation shocks 27 24 24 25 27 30 49 88 B6. One-time 30 percent nominal depreciation relative to the baseline in 2019 5/ 27 37 37 39 42 46 71 122 PV of debt-to-exports ratio Baseline 91 87 89 93 100 109 169 266 A Itery variables at their historical averages in 2018-2038 1/ 91 91 97 109 124 143 266 48 Reserve Natural Disaster 2019 91 90 97 109 124 143 266 48 Bound Tests Bound Tests Bound Tests PV of debt-to-exports and to evaluation in 2019-2020 91 87 89 93 100 109 169 266 Bound Obler COP deflator at historical average minus one standard deviation in 2019-2020 91 87 89 93 100 109 169 266 BL Real COP growth at historical aver	B4. Net non-debt creating flows at historical average minus one standard deviation in 2019-2020 4/	27	25	24	25	27	30	48	84		
B6. One-time 30 percent nominal depreciation relative to the baseline in 2019 5/ 27 37 37 39 42 46 71 122 PV of debt-to-exports ratio Baseline 91 67 69 93 100 109 169 266 A Atternative Scenarios Atternative Scenarios A. New public sector loans on less favorable terms in 2018-2038 2 91 90 97 109 124 143 260 488 Severe Natural Disaster 2019 91 87 79 93 100 109 169 286 B. Beal GDP growth at historical average minus one standard deviation in 2019-2020 3/ 91 877 89 93 100 109 169 286 B. Real GDP growth at historical average minus one standard deviation in 2019-2020 3/ 91 877 89 93 100 109 169 286 B. Real GDP growth at historical average minus one standard deviation in 2019-2020 4/ 91 84 85 90 88 101 169 286 Cor	B5. Combination of B1-B4 using one-half standard deviation shocks	27	24	24	25	27	30	49	88		
Prodebt-to-exports ratio 9 67 69 93 100 109 69 26 A. Hear Not Scenaria 9 9 75 70 17 15 65 65 28 A. New yairables at thistorical averages in 2018-2039 1/ 9 9 10 9 9 10 <t< td=""><td>B6. One-time 30 percent nominal depreciation relative to the baseline in 2019 5/</td><td>27</td><td>37</td><td>37</td><td>39</td><td>42</td><td>46</td><td>71</td><td>122</td></t<>	B6. One-time 30 percent nominal depreciation relative to the baseline in 2019 5/	27	37	37	39	42	46	71	122		
Bescline 9 87 89 93 100 109 169 26 A. Atternative Scenarios 1 81 75 70 67 65 66 62 A. Severa habita sat their historical averages in 2018-2038 1/ 91 90 97 109 124 143 266 488 Severe Natural Disaster 2019 91 87 89 93 100 109 165 266 488 B. Bound Tests 8 8 94 107 115 162 172 185 272 246 B. Soptor shou growth at historical average minus one standard deviation in 2019-2020 91 87 89 93 100 109 169 266 B. Net on-debt creating flows at historical average minus one standard deviation in 2019-2020 91 87 89 93 100 109 169 266 B. One-dine 018-B4 using one-half standard deviation in 2019-2020 91 87 89 93 100 109 169 266 B. One-time 30 percent nominal depreciation relative to the baseline in 2019-2020 91 84	PV of debt-to-exports	ratio									
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A1. key variables at their historical averages in 2018-2038 1/ 91 91 91 90 97 109 124 143 260 488 Severe Natural Disaster 2019 91 90 97 109 172 112 113 128 185 250 B. Bound Test 91 97 191 97 193 100 109 169 266	A. Alternative Scenarios										
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B1. Real GDP growth at historical average minus one standard deviation in 2019-2020 3/ 91 87 89 93 100 109 169 286 B2. Export value growth at historical average minus one standard deviation in 2019-2020 3/ 91 87 89 93 100 109 169 286 B3. US dollar GDP deflator at historical average minus one standard deviation in 2019-2020 4/ 91 84 85 90 98 108 174 311 B6. One-time 30 percent nominal depreciation relative to the baseline in 2019 5/ 91 87 89 93 100 109 169 286 PV of debt-to-revenue ratio Alternative Scenarios Real GDP growth at historical average minus one standard deviation in 2019-2020 4/ 91 87 79 74 70 68 67 53 55 Alternative Scenarios Alternative Scenarios Alternative Scenarios B. Leal GDP growth at historical average minus one standard deviation in 2019-2020 87 87 79 74 70 68 67 53 55 <td colspan<="" td=""><td>B. Bound Tests</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td>	<td>B. Bound Tests</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	B. Bound Tests									
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B3. US dollar GDP deflator at historical average minus one standard deviation in 2019-2020 // 91 87 89 93 100 109 169 286 B4. Net non-debt creating flows at historical average minus one standard deviation in 2019-2020 // 91 84 81 86 93 101 161 281 B5. Combination of B1-B4 using one-half standard deviation shocks 91 87 89 93 100 109 169 286 B6. One-time 30 percent nominal depreciation relative to the baseline in 2019 5/ 91 87 89 93 100 109 169 286 PV of debt-to-revenue ratio Reseline 87 84 88 94 102 113 135 254 A Alternative Scenarios A To 79 74 70 68 67 53 55 Asymptotic sector loans on less favorable terms in 2018-2038 1/ 87 96 106 112 121 132 148 208 433 Benund Tests BL cond Tests BL cond Test 101 110	B2. Export value growth at historical average minus one standard deviation in 2019-2020 3/	91	112	155	162	172	185	272	424		
B4. Net non-debt creating flows at historical average minus one standard deviation in 2019-2020 4/ 91 84 81 86 93 101 161 281 B5. Combination of B1-B4 using one-half standard deviation shocks 91 87 89 93 100 109 169 286 PV of debt-to-revenue ratio PV of debt-to-revenue ratio Atternative Scenarios Atternative Scenarios Atternative Scenarios Atternative Scenarios Atternative Scenarios B. Bound Tests B. Bound Tests B. Bound Tests B1. Real GDP growth at historical average minus one standard deviation in 2019-2020 87 88 95 101 110 122 146 274 B. Bound Tests B1. Real GDP growth at historical average minus one standard deviation in 2019-2020 87 88 95 101 110 122 146 274 B3. US dollar GDP deflot at historical average minus one standard deviation in 2019-2020 87 92 109 116 125	B3. US dollar GDP deflator at historical average minus one standard deviation in 2019-2020	91	87	89	93	100	109	169	286		
B5. Combination of B1-B4 using one-half standard deviation shocks 91 84 85 90 98 108 174 311 B6. One-time 30 percent nominal depreciation relative to the baseline in 2019 5/ 91 87 89 93 100 109 169 286 PV of debt-to-revenue ratio PV of debt-to-revenue ratio Atternative Scenarios Atternative Scenarios Atternative Scenarios Atternative Scenarios Atternative Scenarios Asternative Scenarios B. Bound Tests B. Bound Tests B1. Real GDP growth at historical average minus one standard deviation in 2019-2020 87 87 95 101 110 122 146 274 B. Leal GDP growth at historical average minus one standard deviation in 2019-2020 87 87 92 109 116 125 136 155 268 B. Real GDP growth at historical average minus one standard deviation in 2019-2020 87 92 109 116 125 136 155 268	B4. Net non-debt creating flows at historical average minus one standard deviation in 2019-2020 4/	91	84	81	86	93	101	161	281		
B6. One-time 30 percent nominal depreciation relative to the baseline in 2019 5/ 91 87 89 93 100 109 169 286 PV of debt-to-revenue ratio Baseline 87 84 88 94 102 113 135 254 A Alternative Scenarios A. Alternative Scenarios A. New public sector loans on less favorable terms in 2018-2038 1/ 87 79 74 70 68 67 53 55 A. New public sector loans on less favorable terms in 2018-2038 2 87 87 96 109 126 148 208 433 Secret Natural Disaster 2019 87 87 96 109 126 148 208 433 B. Bound Tests B1. Real GDP growth at historical average minus one standard deviation in 2019-2020 87 89 101 110 122 146 274 82. Export value growth at historical average minus one standard deviation in 2019-2020 87 86 94 105 152 268 83. US dollar GDP deflator at histori	B5. Combination of B1-B4 using one-half standard deviation shocks	91	84	85	90	98	108	174	311		
PV of debt-to-revenue ratio Baseline 87 84 88 94 102 113 135 254 A Alternative Scenarios 5 7 79 74 70 68 67 53 55 A. Nev variables at their historical averages in 2018-2038 1/ A.2. New public sector loans on less favorable terms in 2018-2038 2 87 87 96 109 126 148 208 433 Bevere Natural Disaster 2019 87 96 106 112 121 132 146 260 B. Bound Tests 81 84 95 101 101 122 146 274 82. Export value growth at historical average minus one standard deviation in 2019-2020 87 86 92 98 107 118 141 266 83. US dollar GDP deflator at historical average minus one standard deviation in 2019-2020 // 83. US dollar GDP deflator at historical average minus one standard deviation in 2019-2020 // 84. Net non-debt creating flows at historical average minus one standard deviation in 2019-2020 // 85. Combination of B1-B4 using one-half standard deviation shocks 87 86 94 105 128 249 86. One-time 30 percent nominal depreciation relativ	B6. One-time 30 percent nominal depreciation relative to the baseline in 2019 5/	91	87	89	93	100	109	169	286		
Baseline 87 84 88 94 102 113 135 254 A. Alternative Scenarios A. Alternative Scenarios 5 6 109 126 148 208 433 208	PV of debt-to-revenue	ratio									
A. Alternative Scenarios A. Alternative Scenarios A1. Key variables at their historical averages in 2018-2038 1/ A2. New public sector loans on less favorable terms in 2018-2038 2 B7 87 B7 96 106 112 112 121 112 121 112 121 112 121 112 121 112 121 112 121 112 121 112 121 112 121 113 148 113 148 113 148 113 148 114 121 115 148 114 121 115 148 114 148 115 148 115 148 114 141 115 136 115 136 115 136 115 136 1161 125	Raseline	87	84	88	94	102	113	135	254		
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A1. Key variables at their historical averages in 2018-2038 1/ 87 79 74 70 68 67 53 55 A2. New public sector loans on less favorable terms in 2018-2038 2 87 87 96 109 126 148 208 433 Severe Natural Disaster 2019 87 96 106 112 121 132 148 260 B. Bound Tests 87 96 106 112 121 132 148 260 B1. Real GDP growth at historical average minus one standard deviation in 2019-2020 87 88 95 101 110 122 146 274 B2. Export value growth at historical average minus one standard deviation in 2019-2020 87 86 92 109 116 125 136 155 268 B3. US dollar GDP deflator at historical average minus one standard deviation in 2019-2020 87 86 92 98 107 118 141 266 B4. Net non-debt creating flows at historical average minus one standard deviation in 2019-2020 4/ 87 82 80 86 94 105 128 249 B5	A. Alternative Scenarios										
A2. New public sector loans on less favorable terms in 2018-2038 287878796109126148208433Severe Natural Disaster 20198796106112121132148260B. Bound TestsB1. Real GDP growth at historical average minus one standard deviation in 2019-2020878895101110122146274B2. Export value growth at historical average minus one standard deviation in 2019-2020 3/8792109116125136155268B3. US dollar GDP deflator at historical average minus one standard deviation in 2019-202087869298107118141266B4. Net non-debt creating flows at historical average minus one standard deviation in 2019-2020 4/8782808694105128249B5. Combination of B1-B4 using one-half standard deviation shocks8780808594105131260B6. One-time 30 percent nominal depreciation relative to the baseline in 2019 5/87120125133145161192	A1. Key variables at their historical averages in 2018-2038 1/	87	79	74	70	68	67	53	55		
Severe Natural Disaster 20198796106112121132148260B. Bound TestsB1. Real GDP growth at historical average minus one standard deviation in 2019-2020878895101110122146274B2. Export value growth at historical average minus one standard deviation in 2019-2020 3/8792109116125136155268B3. US dollar GDP deflator at historical average minus one standard deviation in 2019-202087869298107118141266B4. Net non-debt creating flows at historical average minus one standard deviation in 2019-2020 4/8782808694105128249B5. Combination of B1-B4 using one-half standard deviation shocks8780808594105131260B6. One-time 30 percent nominal depreciation relative to the baseline in 2019 5/87120125133145161192	A2. New public sector loans on less favorable terms in 2018-2038 2	87	87	96	109	126	148	208	433		
B. Bound Tests B1. Real GDP growth at historical average minus one standard deviation in 2019-2020 87 88 95 101 110 122 146 274 B2. Export value growth at historical average minus one standard deviation in 2019-2020 3/ 87 92 109 116 125 136 155 268 B3. US dollar GDP deflator at historical average minus one standard deviation in 2019-2020 87 86 92 98 107 118 141 266 B4. Net non-debt creating flows at historical average minus one standard deviation in 2019-2020 4/ 87 82 80 86 94 105 128 249 B5. Combination of B1-B4 using one-half standard deviation shocks 87 80 80 85 94 105 131 260 B6. One-time 30 percent nominal depreciation relative to the baseline in 2019 5/ 87 80 80 85 94 105 131 260	Severe Natural Disaster 2019	87	96	106	112	121	132	148	260		
B1. Real GDP growth at historical average minus one standard deviation in 2019-2020878895101110122146274B2. Export value growth at historical average minus one standard deviation in 2019-2020 3/8792109116125136155268B3. US dollar GDP deflator at historical average minus one standard deviation in 2019-202087869298107118141266B4. Net non-debt creating flows at historical average minus one standard deviation in 2019-2020 4/8782808694105128249B5. Combination of B1-B4 using one-half standard deviation shocks8780808594105131260B6. One-time 30 percent nominal depreciation relative to the baseline in 2019 5/87120125133145161192362	B. Bound Tests										
B2. Export value growth at historical average minus one standard deviation in 2019-2020 3/ 87 92 109 116 125 136 155 268 B3. US dollar GDP deflator at historical average minus one standard deviation in 2019-2020 87 86 92 98 107 118 141 266 B4. Net non-debt creating flows at historical average minus one standard deviation in 2019-2020 4/ 87 82 80 86 94 105 128 249 B5. Combination of B1-B4 using one-half standard deviation shocks 87 80 80 85 94 105 131 260 B6. One-time 30 percent nominal depreciation relative to the baseline in 2019 5/ 120 125 133 145 161 195 268	B1. Real GDP growth at historical average minus one standard deviation in 2019-2020	87	88	95	101	110	122	146	274		
B3. US dollar GDP deflator at historical average minus one standard deviation in 2019-2020 87 86 92 98 107 118 141 266 B4. Net non-debt creating flows at historical average minus one standard deviation in 2019-2020 4/ 87 82 80 86 94 105 128 249 B5. Combination of B1-B4 using one-half standard deviation shocks 87 80 80 85 94 105 131 260 B6. One-time 30 percent nominal depreciation relative to the baseline in 2019 5/ 87 120 125 133 145 161 192	B2. Export value growth at historical average minus one standard deviation in 2019-2020 3/	87	92	109	116	125	136	155	268		
B4. Net non-debt creating flows at historical average minus one standard deviation in 2019-2020 4/ 87 82 80 86 94 105 128 249 B5. Combination of B1-B4 using one-half standard deviation shocks 87 80 80 85 94 105 131 260 B6. One-time 30 percent nominal depreciation relative to the baseline in 2019 5/ 87 120 125 133 145 192 362	B3. US dollar GDP deflator at historical average minus one standard deviation in 2019-2020	87	86	92	98	107	118	141	266		
B5. Combination of B1-B4 using one-half standard deviation shocks 87 80 80 85 94 105 131 260 B6. One-time 30 percent nominal depreciation relative to the baseline in 2019 5/ 87 120 125 133 145 192 362	B4. Net non-debt creating flows at historical average minus one standard deviation in 2019-2020 4/	87	82	80	86	94	105	128	249		
B6. One-time 30 percent nominal depreciation relative to the baseline in 2019 5/ 87 120 125 133 145 161 192 362	B5. Combination of B1-B4 using one-half standard deviation shocks	87	80	80	85	94	105	131	260		
	B6. One-time 30 percent nominal depreciation relative to the baseline in 2019 5/	87	120	125	133	145	161	192	362		

Table 2. Marshall Islands: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2018–38 (concluded) (In percent)

(In percent)

	Projections										
-	2018	2019	2020	2021	2022	2023	2028	2038			
Debt service-to-exports	ratio										
Baseline	10	11	9	9	9	9	10	15			
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2018-2038 1/	10	11	9	9	9	8	7	5			
A2. New public sector loans on less favorable terms in 2018-2038 2	10	11	9	10	10	11	15	28			
Severe Natural Disaster 2019	10	11	10	10	10	10	11	16			
B. Bound Tests											
B1. Real GDP growth at historical average minus one standard deviation in 2019-2020	10	11	9	9	9	9	10	15			
B2. Export value growth at historical average minus one standard deviation in 2019-2020 3/	10	13	13	14	14	14	14	22			
B3. US dollar GDP deflator at historical average minus one standard deviation in 2019-2020	10	11	9	9	9	9	10	15			
B4. Net non-debt creating flows at historical average minus one standard deviation in 2019-2020 4/	10	11	9	9	9	9	10	14			
B5. Combination of B1-B4 using one-half standard deviation shocks	10	12	10	10	10	10	11	15			
B6. One-time 30 percent nominal depreciation relative to the baseline in 2019 5/	10	11	9	9	9	9	10	15			
Debt service-to-revenue	e ratio										
Baseline	10	11	9	9	10	10	8	13			
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2018-2038 1/	10	11	9	9	9	9	6	4			
A2. New public sector loans on less favorable terms in 2018-2038 2	10	11	9	10	10	11	12	25			
Severe Natural Disaster 2019	10	11	10	10	10	10	9	14			
B. Bound Tests											
B1. Real GDP growth at historical average minus one standard deviation in 2019-2020	10	11	10	10	10	10	8	14			
B2. Export value growth at historical average minus one standard deviation in 2019-2020 3/	10	11	9	10	10	10	8	14			
B3. US dollar GDP deflator at historical average minus one standard deviation in 2019-2020	10	11	10	10	10	10	8	14			
B4. Net non-debt creating flows at historical average minus one standard deviation in 2019-2020 4/	10	11	9	9	9	10	8	12			
B5. Combination of B1-B4 using one-half standard deviation shocks	10	11	10	10	10	10	8	13			
B6. One-time 30 percent nominal depreciation relative to the baseline in 2019 5/	10	15	13	13	14	14	11	18			
Memorandum item:											
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	51	51	51	51	51	51	51	51			

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 3. Marshall Islands: Public Sector Debt Sustainability Framework, Baseline Scenario, 2015–38

(In percent of GDP, unless otherwise indicated)

	Actual					Estimate				Projections							
	2015	2016	2017	5/ Average	Standard 5/ Deviation	2018	2019	2020	2021	2022	2023	2018-23 Average	2028	2038	2024-3 Averac		
					Deviation							Average			Averag		
Public sector debt 1/	49.1	42.5	35.2			32.8	32.5	35.3	39.5	45.3	52.3		92.8	151.9			
of which: foreign-currency denominated	49.1	42.5	35.2			32.8	32.5	35.3	39.5	45.3	52.3		92.8	151.9			
Change in public sector debt	-2.2	-6.5	-7.3			-2.5	-0.3	2.8	4.3	5.7	7.0		7.4	4.5			
Identified debt-creating flows	-1.8	-7.7	-8.0			-2.9	-2.1	-1.2	-0.7	-0.2	0.1		-0.5	-0.8			
Primary deficit	-4.1	-5.1	-3.9	-3.7	1.7	-2.6	-1.8	-0.9	-0.3	0.1	0.5	-0.9	0.6	1.3			
Revenue and grants	59.9	62.3	68.0			63.1	61.1	59.2	57.7	56.5	55.4		50.2	45.0			
of which: grants	32.4	30.1	29.6			32.1	30.7	29.2	28.3	27.5	26.8		13.0	11.2			
Primary (noninterest) expenditure	55.7	57.3	64.2			60.5	59.3	58.3	57.4	56.6	55.9		50.8	46.3			
Automatic debt dynamics	2.4	-2.6	-4.1			-0.3	-0.3	-0.3	-0.4	-0.3	-0.4		-1.1	-2.1			
Contribution from interest rate/growth differential	2.4	-2.6	-4.1			-0.3	-0.3	-0.3	-0.4	-0.3	-0.4		-1.1	-2.1			
of which: contribution from average real interest rate	21	-16	-2.6			0.5	0.5	0.4	03	0.4	0.4		0.2	0.0			
of which: contribution from real GDP arowth	0.3	-10	-15			-0.8	-0.7	-0.7	-0.7	-0.7	-0.7		-1.2	-2.2			
Contribution from real exchange rate depreciation	0.0	0.0	0.0			0.0	0.7	0.0	0.0	0.0	0.7		1.2	2.2			
Other identified debt greating flows	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0			0.0			
Drivatization resoluts (negative)	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0			
Privatization receipts (negative)	0.0	0.0	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 relier (HIPC and other)	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0			
Other (specify, e.g. bank recapitalization)	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0			
Residual, including asset changes	-0.4	1.2	0.7			0.5	1.8	4.0	4.9	6.0	6.9		7.9	5.3			
Other Sustainability Indicators																	
PV of public sector debt			29.0			26.9	25.7	26.3	27.6	29.6	32.4		50.2	85.7			
of which: foreign-currency denominated			29.0			26.9	25.7	26.3	27.6	29.6	32.4		50.2	85.7			
Of Which: external PV of contingent liabilities (not included in public sector debt)			29.0			26.9	25.7	26.3	27.6	29.6	32.4		50.2	85.7			
Gross financian pand 2/		1.6						1.0									
PV of public sector debt-to-revenue and grants ratio (in percent)	0.2	-1.0	-0.7			42.7	42.1	44.4	47.8	2.0 52.4	58.4		100.0	5.7 1907			
PV of public sector debt-to-revenue ratio (in percent)			75.6			86.8	84.5	87.8	93.6	102.0	112.9		135.1	254.2			
of which: external 3/			75.6			86.8	84.5	87.8	93.6	102.0	112.9		135.1	254.2			
Debt service-to-revenue and grants ratio (in percent) 4/	7.0	5.6	4.6			4.8	5.3	4.7	4.8	4.9	5.0		5.8	9.7			
Debt service-to-revenue ratio (in percent) 4/ Primary deficit that stabilizes the debt-to-GDP ratio	-1.9	10.9	8.2 3.4			9.8 -0.2	-1.5	-3.7	9.4 -4.6	9.5 -5.7	-6.6		7.8 -6.9	-3.2			
Key macroeconomic and fiscal assumptions																	
Real GDP growth (in percent)	-0.6	20	36	14	29	25	23	22	20	1.8	16	21	15	15			
Average nominal interest rate on forex debt (in percent)	2.5	2.0	2.0	27	0.4	2.5	26	2.4	2.0	2.0	1.8	22	12	10			
Average real interest rate on domestic debt (in percent)	2.5	2.4	2.4	2.7	0.4	2.5	2.0	2.4		2.0	1.0	L.L	1.2	1.0			
Real exchange rate depreciation (in percent, + indicates depreciation)	0.0	0.0	0.0	0.0	0.0	0.0											
Inflation rate (GDP deflator, in percent)	-1.5	6.1	9.3	2.4	3.6	0.9	1.0	1.2	1.3	0.9	1.0	1.0	1.0	1.0			
Growth of real primary spending (deflated by GDP deflator, in percent)	14.9	4.9	16.1	3.6	6.5	-3.4	0.4	0.4	0.4	0.4	0.3	-0.3	0.5	0.6			
Creat element of new externel berrowing (in percent)						43.1	50.0	50.3	51.3	52.1	52.5	49.9	53.7	51.2			

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 4. Marshall Islands: Sensitivity Analysis for Key Indicators of Public Debt, 2018–38

2018 2019 PV of Debt-to-GDP Ratio Easeline 27 26 A. Atternative scenarios 7 25 A. Atternative scenarios 27 25 A. Primary balance is unchanged from 2018 27 25 A. Permanently lower GDP growth 1/ 27 28 Severe Natural Disaster 2019 27 28 B. Bound tests 81 Real GDP growth is at historical average minus one standard deviations in 2019-2020 27 27 B3. Combination of B1-B2 using one half standard deviations shocks 27 28 31 B3. Combination of B1-B2 using one half standard deviations shocks 27 27 31 PV of Debt-to-Revenue Ratio 2/ 88 34 42 A. Alternative scenarios 43 42 44 42 A. Permanently lower GDP growth 1/ 43 42 44 4	Projections								
PV of Debt-to-GDP Ratio Baseline 27 26 A. Atternative scenarios 27 25 A.1. Real GDP growth and primary balance are at historical averages 27 25 A.2. Primary balance is unchanged from 2018 27 25 B.3. Permanently lower GDP growth 1/ 27 26 Severe Natural Disaster 2019 27 26 B. Bound tests 27 26 B.4. Ore-time 3D percent real depreciation in 2019-2020 27 27 B.3. Combination of B1-B2 using one half standard deviations in 2019-2020 27 26 B.4. One-time 3D percent real depreciation in 2019 27 31 PV of Debt-to-Revenue Ratio 2/ Baseline 43 42 A. Alternative scenarios 43 41 A.1. Real GDP growth and primary balance are at historical averages 43 41 A.2. Primary balance is unchanged from 2018 43 41 A.2. Primary balance is unchanged from 2018 43 41 A.2. Primary balance is unchanged from 2018 43 42 A. Alternative scenarios 43 42 44 B. Fo	2020	2018 2019	020 2021	2022	2023	2028	2038		
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A Atternative scenarios A. Atternative scenarios 27 25 A. Primary balance is unchanged from 2018 27 25 A. Primary balance is unchanged from 2018 27 26 Severe Natural Disaster 2019 27 26 B. Bound tests 7 26 Severe Natural Disaster 2019 27 27 B. Real GDP growth is at historical average minus one standard deviations in 2019-2020 27 27 B. Primary balance is at historical average minus one standard deviations in 2019-2020 27 27 B. One-time 30 percent real depreciation in 2019 27 37 B. One-time 30 percent real depreciation in 2019 27 31 V V O Debt-to-Revenue Ratio 2/ 3 42 A. Alternative scenarios 3 41 3 41 A. Permanently lower GDP growth 1/ 43 41 3 42 Severe Natural Disaster 2019 43 46 43 42 Severe Natural Disaster 2019 43 44 3 42 Severe Natural Disaster 2019 43 44 3 42 Severe Natural Disaster 2019 43	26	27 26	26 28	3 30) 32	50	86		
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Severe Natural Disaster 2019 27 28 b. Bound tests 27 28 B1. Real GDP growth is at historical average minus one standard deviations in 2019-2020 27 26 B3. Combination of B1-B2 using one half standard deviation shocks 27 26 B4. One-time 30 percent real depreciation in 2019 27 37 B5. 10 percent of GDP increase in other debt-creating flows in 2019 27 31 PV of Debt-to-Revenue Ratio 2/ Baseline 43 42 A. Alternative scenarios 43 41 A1. Real GDP growth and primary balance are at historical averages 43 41 A2. Primary balance is unchanged from 2018 43 41 A3. Permanently lower GDP growth 1/ 43 42 Severe Natural Disaster 2019 43 46 B. Bound tests 43 42 B1. Real GDP growth is at historical average minus one standard deviations in 2019-2020 43 44 B2. Primary balance is at historical average minus one standard deviations in 2019-2020 43 42 B3. Combination of B1-B2 using one half standard deviation shocks 43 42 B4. One-time 30 percent real depre	27	27 26	27 29	9 31	35	60	123		
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B. Bound tests B1. Real GDP growth is at historical average minus one standard deviations in 2019-2020 43 44 B2. Primary balance is at historical average minus one standard deviations in 2019-2020 43 42 B3. Combination of B1-B2 using one half standard deviation shocks 43 42 B4. One-time 30 percent real depreciation in 2019 43 60 B5. 10 percent of GDP increase in other debt-creating flows in 2019 43 50 Debt Service-to-Revenue Ratio 2/ Baseline 5 5 A. Alternative scenarios 5 5 A1. Real GDP growth and primary balance are at historical averages 5 5 A2. Primary balance is unchanged from 2018 5 5 A3. Permanently lower GDP growth 1/ 5 5 Severe Natural Disaster 2019 5 5 B. Bound tests 5 5	51	43 46	51 54	4 59	66	110	203		
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Debt Service-to-Revenue Ratio 2/ Baseline 5 5 A. Alternative scenarios 5 5 A1. Real GDP growth and primary balance are at historical averages 5 5 A2. Primary balance is unchanged from 2018 5 5 A3. Permanently lower GDP growth 1/ 5 5 Severe Natural Disaster 2019 5 5 B. Bound tests 5 5	53	43 50	53 56	5 61	67	111	202		
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A. Alternative scenarios A1. Real GDP growth and primary balance are at historical averages 5 5 A2. Primary balance is unchanged from 2018 5 5 A3. Permanently lower GDP growth 1/ 5 5 Severe Natural Disaster 2019 5 5 B. Bound tests 5 5	5	5 5	5 5	5 5	5 5	6	10		
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A2. Primary balance is unchanged from 2018 5 5 A3. Permanently lower GDP growth 1/ 5 5 Severe Natural Disaster 2019 5 5 B. Bound tests 5 5	5	5 5	5 5	5 5	5 5	5	6		
A3. Permanently lower GDP growth 1/ 5 5 Severe Natural Disaster 2019 5 5 B. Bound tests 5 5	5	5 5	5 5	5 5	5 5	5	7		
Severe Natural Disaster 2019 5 5 B. Bound tests P1. Deal CDD growth is at historical suppose minus are star first divisitions in 2010 2020 5 5	5	5 5	5 5	5 5	5 5	6	12		
B. Bound tests	5	5 5	5 5	5 5	5 5	6	10		
P1 Deal CDD growth is at historical everyone minus and star Jand Junisticas in 2010-2020									
DE REALIQUE DICIVITI IS AT DISTORICAL AVERAGE MINUS ONE STANDARD DEVIATIONS IN 2019-2020	5	55	5 6	5 5	5 5	7	13		
B2. Primary balance is at historical average minus one standard deviations in 2019-2020 5 5	5	5 5	5 5	555	5 5	6	10		
B3. Combination of B1-B2 using one half standard deviation shocks 5 5	5	5 5	5 5	5 5	5 5	6	11		
B4. One-time 30 percent real depreciation in 2019 5 6	7	5 6	7 7	77	· 7	8	15		
B5. 10 percent of GDP increase in other debt-creating flows in 2019 5 5	5	5 5	5 5	5 5	5 5	6	10		

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.