INTERNATIONAL MONETARY FUND

VANUATU

STAFF REPORT FOR THE 2018 ARTICLE IV CONSULTATION—DEBT SUSTAINABILITY ANALYSIS

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This update of the debt sustainability analysis (DSA) for Vanuatu shows that external risk of debt distress remains moderate. External PPG debt to GDP began to rise in 2014, increasing sharply through end-2016. An upward trend in this measure is anticipated to continue over the next few years due to the planned implementation of public infrastructure projects and reconstruction activities. This increase in indebtedness is expected to be manageable, provided the financing terms are concessional, and the surge in financing needs is temporary. However, given the country's high vulnerability to natural disaster shocks and increased debt service burdens in the medium term, the authorities should be vigilant about rapid debt accumulation. They should take into account the country's absorptive capacity when considering the pace and scale of new borrowing. Also, such borrowing should continue to be on concessional terms to reduce the debt burden. Furthermore, the authorities should consider updating the debt management strategy annually, stand ready to reprioritize spending, and seek ways to increase revenues (including by introducing an income tax) to rebuild fiscal buffers against shocks, including natural disaster shocks.[1].

[1] This DSA was prepared jointly with the World Bank, in accordance with the standard Debt Sustainability Framework for Low-income Countries (LIC DSF) approved by the Executive Boards of the IMF and the IDA. Debt sustainability is assessed in relation to policy-dependent debt burden thresholds. Vanuatu, with an average Country Policy and Institutional Assessment (CPIA) score of 3.40 over the last three years, is considered to have moderate policy and institutional capacity for the purposes of the DSA framework. Thus, the external debt burden thresholds for the FSM are (i) PV of debt-to-GDP ratio: 40 percent; (ii) PV of debt-to-exports ratio: 150 percent; (iii) PV of debt-to-revenue ratio: 250 percent; (iv) debt service-to-exports ratio: 20 percent: and (v) debt service-to-revenue ratio: 20 percent.

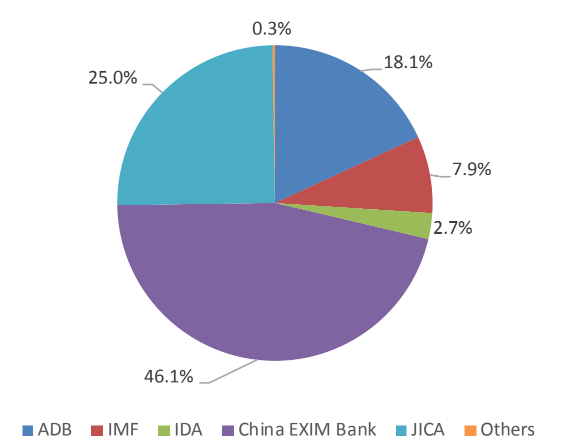
BACKGROUND

1. **Vanuatu's external public debt has risen sharply since 2015 when Cyclone Pam hit the country**—external public and publicly guaranteed (PPG) debt increased from 16.3 percent of GDP in 2014 to 30.5 percent in 2015 and then rose further to 37.6 percent in 2016. This was mainly driven by disbursements for infrastructure projects from bilateral creditors, which kickstarted construction in 2015 despite Cyclone Pam's disruption, and accelerated it in 2016. The IMF's quick RCF/RFI disbursement of USD 23.8 million in June 2015 catalyzed the international community's efforts to support Vanuatu's recovery from Cyclone Pam. The IDA and ADB also have supported the country's reconstruction efforts by providing loans and grants. Vanuatu has received loans from bilateral and multilateral donors for both development and reconstruction.

2. **The government prepared its first debt management strategy (DMS) 2015–2017 in August 2015.** The overall objective of the DMS is to minimize the cost of public debt, consistent with the government's tolerance for financial risk of the existing public debt portfolio. To achieve this, the government set six specific objectives for the 2015–2017 period. One of these is to maintain the present value (PV) of public external debt below 40 percent of GDP. Another is to minimize the cost of public debt by contracting external loans with a grant element of at least 35 percent. The government will update the strategy in 2018.

3. **External PPG debt stood at US$290 million[2] (37.6 percent of GDP) as of end-2016, and bilateral creditors have emerged as a greater source of funding than multilateral creditors.** China EXIM Bank and JICA accounted for 46.1 and 25.0 percent of total external PPG debt respectively, while the share of multilateral creditors—the IMF, ADB and IDA—amounted to 28.7 percent. Loans were contracted on concessional terms, with the interest rates on debt fairly low (0-2 percent), and loan maturity long (20-40 years). This is due to a relatively high grant element of debt resulting in a low debt service burden. Due to data limitations, external liabilities of commercial banks have been used as a proxy for private external debt.

Breakdown of External PPG Debt Holders



Sources: Vanuatu authorities and IMF staff estimates.

[2] The revision to the debt stock was made due to higher-than-expected disbursements in 2015 for donor-funded projects.

4. Public domestic debt, comprised of central government bonds, stood at VUV 7.4 billion as of end-2016 (about USD 65.2 million, or 8.5 percent of GDP). The bonds were largely held by public corporations (primarily the Vanuatu National Provident Fund), followed by the Reserve Bank of Vanuatu and commercial banks. The government provides guarantees for Government Business Enterprises (GBEs), such as Air Vanuatu. Publicly guaranteed debt is estimated to stand near VUV 2.4 billion (about USD 21.3 million, or 2.8 percent of GDP).

Stock of public debt (external and domestic) at end-2016

	In million of Vatu	In million of US dollars	As a share of total debt	In percent of GDP
Total public debt	42,593	377	100	48.8
External	32,810	290	77.0	37.6
Multilateral	9,411	83	22.1	10.8
ADB	5,952	53	14.0	6.8
IDA	875	8	2.1	1.0
IMF	2,584	23	6.1	3.0
Bilateral	23,399	207	54.9	26.8
China EXIM Bank	15,124	134	35.5	17.3
JICA	8,192	72	19.2	9.4
Others	83	1	0.2	0.1
Domestic	9,784	87	23.0	11.2
Government bonds	7,377	65	17.3	8.5
Publicly guaranteed debt	2,407	21	5.7	2.8

Source: Vanuatu authorities and IMF staff estimates.

METHODOLOGY AND ASSUMPTIONS

5. The macroeconomic assumptions in the DSA incorporate long-term effects of natural disasters and climate change from 2023 onwards. The baseline scenario, which is based on current policies and consistent with the macroeconomic framework presented in the policy note, assumes no disaster from 2017 to 2022 to avoid complicating policy discussion of the medium-term outlook. However, from 2023 onwards, the baseline assumptions adjust GDP growth, the current account balance and primary balance to incorporate the effects of natural disasters and climate change. The annual effects on two balances are calculated by spreading the impact of a large natural disaster, like Cyclone Pam, over the fifteen-year period from 2023 to 2037. The DSA framework uses a discount rate of 5 percent to calculate the net PV of external debt. The following are the key macroeconomic assumptions under the baseline scenario:

- ***GDP growth.*** Real GDP growth is expected to remain high, 4.2 percent in 2017 and 3.8 percent in 2018, due to the implementation of infrastructure projects, and reconstruction after Cyclone Pam. In the medium term (2017–2022), growth is expected to average 3.4 percent, supported mainly by public investment, tourism, and agriculture. In the long term (2023-2037), growth is projected to be 3.0 percent on average, after netting out 0.5 percentage point[3] as the impact of natural disasters and climate change.
- ***Inflation. T***he inflation rate (GDP deflator) is expected to rise to 3.1 percent in 2017 and further to 4.8 percent in 2018 due to the increase in VAT rate, the public wage bill, and the minimum wage rate. In the long run, it is projected to average 3.3 percent.
- ***Balance of payments.*** The non-interest current account deficit in 2017 and 2018 is expected to remain high due mainly to elevated imports driven by reconstruction and project

[3] Please see "The Economic Impact of Natural Disaster in Pacific Island Countries: Adaptation and Preparedness" by Dongyeol Lee, Irene Zhang, and Chau Nguyen (IMF Working Paper, forthcoming).

implementation. In the long term, the deficit is expected to narrow to 4.4 percent of GDP on average, as imports likely decrease with the completion of the reconstruction projects and major agricultural exports recover. After 2023, the long-term effect of natural disasters and climate change are projected to widen the deficit by 0.7 percentage points annually.

- ***FDI inflows.*** FDI inflows are expected to average about 3.9 percent over the medium term and 2.8 percent over the longer term.
- ***Fiscal balance.*** The primary balance is expected to be negative at 6.5 and 6.9 percent of GDP in 2017 and 2018 respectively, reflecting increases in expenditures due to Cyclone Pam and infrastructure projects. The primary deficit is expected to decrease to 3.8 percent of GDP on average in the medium term and 1.8 percent in the long term, owing to the completion of reconstruction projects, the value-added tax hike and the introduction of the income tax. The effects of natural disasters and climate change are expected to deteriorate the fiscal balance by 0.3 percent of GDP annually.
- ***External borrowing and grants.*** In addition to the ongoing projects supported by JICA and China EXIM Bank, disbursements for other projects are expected to materialize in the next three to seven years. These include road, school reconstruction and energy access projects financed by the ADB, and infrastructure reconstruction and improvement projects supported by IDA. New external borrowing is projected to average 3.9 percent of GDP over the longer term, while the grant-element of the borrowing is gradually declining. Grants are expected to gradually decline to 5.5 percent of GDP, as the economy grows.

Vanuatu: Baseline Macroeconomic Assumptions

(In percent of GDP, unless otherwise stated)

	2017	2018	2019	2020	2021	2022	2017-22 average	2023-37 average	Effect of ND and CC	Historical average (2007-16)
Real GDP growth	4.2	3.8	3.5	3.0	3.0	3.0	3.4	3.0	0.5	2.7
Inflation rate (GDP deflator, in percent)	3.1	4.8	3.4	3.3	3.3	3.3	3.5	3.3		3.2
Non-interest current account deficit	8.1	8.2	7.7	7.0	6.8	6.7	7.4	4.4	0.7	5.8
Net FDI (negative = inflow)	-3.8	-3.9	-4.0	-4.0	-3.8	-3.8	-3.9	-2.8		-5.7
Primary deficit	6.5	6.9	3.2	2.5	2.0	1.9	3.8	1.8	0.3	2.1
Grants	8.3	8.2	8.0	7.9	7.7	7.6	8.0	7.4		5.5

Source: IMF staff projections

CUSTOMIZED SCENARIO OF ANOTHER MAJOR NATURAL DISASTER EVENT

6. **The extreme natural disaster shock is based on the experiences during Cyclone Pam.** The shock's impact resulted in the reduction of real GDP growth by roughly 5 percentage points[4] and a sharp increase in external borrowing—external debt increased by about 14 percent of GDP in 2015. The

[4] This is also broadly consistent with the one-time GDP growth adjustment for Vanuatu under a large natural disaster shock scenario (4.2–4.4 percentage points) suggested by "The Economic Impact of Natural Disaster in Pacific Island Countries: Adaptation and Preparedness".

customized scenario assumes that another extreme natural disaster shock hits in 2020, leading to an increase in debt-to-GDP ratio by 14 percentage points in that year.

EXTERNAL DEBT SUSTAINABILITY

7. The baseline scenario indicates that the external debt of Vanuatu remains sustainable. All indicators capturing the PV of external PPG debt remain below the thresholds over the projection period (Figure 1.1). The nominal external PPG debt peaks in 2020 at 44.3 percent of GDP, from 37.6 percent of GDP in 2016, due to the disbursement of infrastructure projects and reconstruction projects for road and school. Vanuatu's public external debt service ratios are also relatively low, reflecting the fact that most of its public external debt is highly concessional.

8. Standard stress tests indicate that one threshold for public external debt is breached (Figure 1.1). In the most extreme shock scenario[5], namely a one-time depreciation shock, the PV of debt to GDP ratio breaches the threshold of 40 percent, indicating moderate risk of external debt distress. However, this case is regarded as 'borderline' under the DSA framework, where the largest breach of a threshold falls within a ±5 percent band around threshold. To address the borderline case, the framework introduces the probability approach. The main difference is that the probability approach incorporates a country's individual CPIA score and average GDP growth rate, whereas the traditional approach uses one of three discrete CPIA values (3.25 for weak, 3.50 for medium, and 3.75 for strong) and an average growth rate across LICs. The probability approach indicates a more substantial breach of the threshold for the PV of debt-to-GDP ratio, reinforcing the initial assessment of moderate risk (Figure 1.2).

9. The stress test also indicates that a shock to financing terms—a rise in interest rates on new borrowing by 2 percentage points compared to the baseline—is also an important risk to sustainability during the projection period (2017-2037) (Table 2). This suggests that external borrowing should be contracted on concessional terms as much as possible.

10. The customized scenario with another major natural disaster event is expected to adversely affect debt trajectories—solvency as well as liquidity indicators— though scenario measures continue to remain below thresholds. However, it should be noted that severe natural disasters could occur several times within a twenty-year horizon, which could have a large cumulative effect on debt sustainability.

PUBLIC DEBT SUSTAINABILITY

11. The PV of public sector debt in percent of GDP remains below the benchmark under the baseline scenario (Figure 2). Nominal public debt (external plus domestic) is expected to increase from 48.8 percent of GDP in 2016 to 53.9 percent in 2019 and then decline to 50.8 percent in 2037. The debt service-to-revenue ratio is expected to rise from 9.9 percent in 2017 to 13.5 percent in 2037.

[5] The most extreme stress test is the test that yields the highest ratio on or before 2027.

12. The standard stress tests show one breach of public benchmark. The PV of debt-to-GDP breaches the threshold of 58 percent of GDP significantly in a scenario in which the primary balance is held fixed at its 2017 level (6.5 percent of GDP). This scenario, however, is not fully applicable, as the heightened deficit of 2017 is mainly caused by increases in spending on Cyclone Pam reconstruction and infrastructure projects which are financed by external creditors. However, the breach suggests that prudent selection of future public investments should be made in line with not only the country's development strategy, but also its debt-carrying and implementation capacity.

CONCLUSION

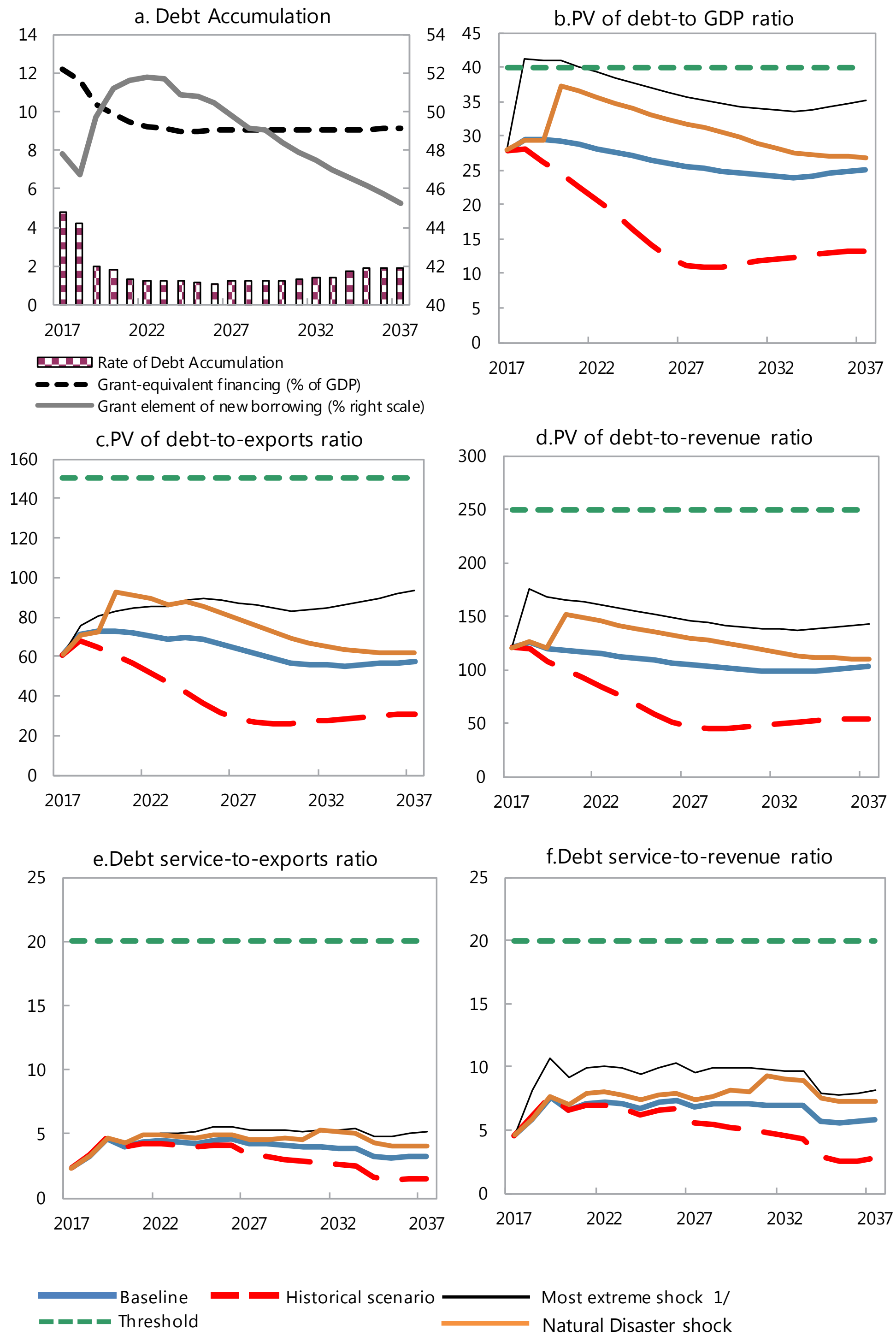
13. The updated DSA suggests that Vanuatu's risk of external debt distress continues to be moderate. In the baseline scenario, which considers the long-term effects of natural disasters and climate change, there is no breach of indicative threshold for each external debt sustainability indicator. However, the stress tests suggest that a one-off 30 percent depreciation shock and a shock to financing terms will negatively affect debt dynamics, causing breach of the PV of debt-to-GDP ratio threshold. External disbursements should be contracted as much as possible on concessional terms or in the form of grants to keep the debt burden contained. Given the recent sharp debt accumulation and increased debt service burden in the medium term, the authorities should consider updating the debt management strategy annually.

14. The customized scenario with a one-off severe natural disaster shock indicates that this shock has large adverse cumulative effects on the country's fiscal position and debt sustainability. Given Vanuatu's vulnerability to natural disasters, the authorities should be vigilant about rapid debt accumulation and rebuild fiscal buffers over the medium term through strengthening public finance management, reprioritizing spending, and mobilizing new revenue resources.

AUTHORITIES' VIEWS

15. The authorities broadly concurred with the assessment of the debt sustainability analysis. Given high infrastructure needs, the authorities underscored the need for financial support from bilateral and multilateral donors for new projects. At the same time, they intended to maintain a grant-element target of at least 35 percent under the upcoming debt management strategy, and seek grant financing as much as possible to reduce debt burden. With debt-servicing for key projects commencing in 2019, the authorities recognized the importance of rebuilding fiscal buffers over the medium term through revenue mobilization efforts, especially the introduction of personal and corporate income taxes.

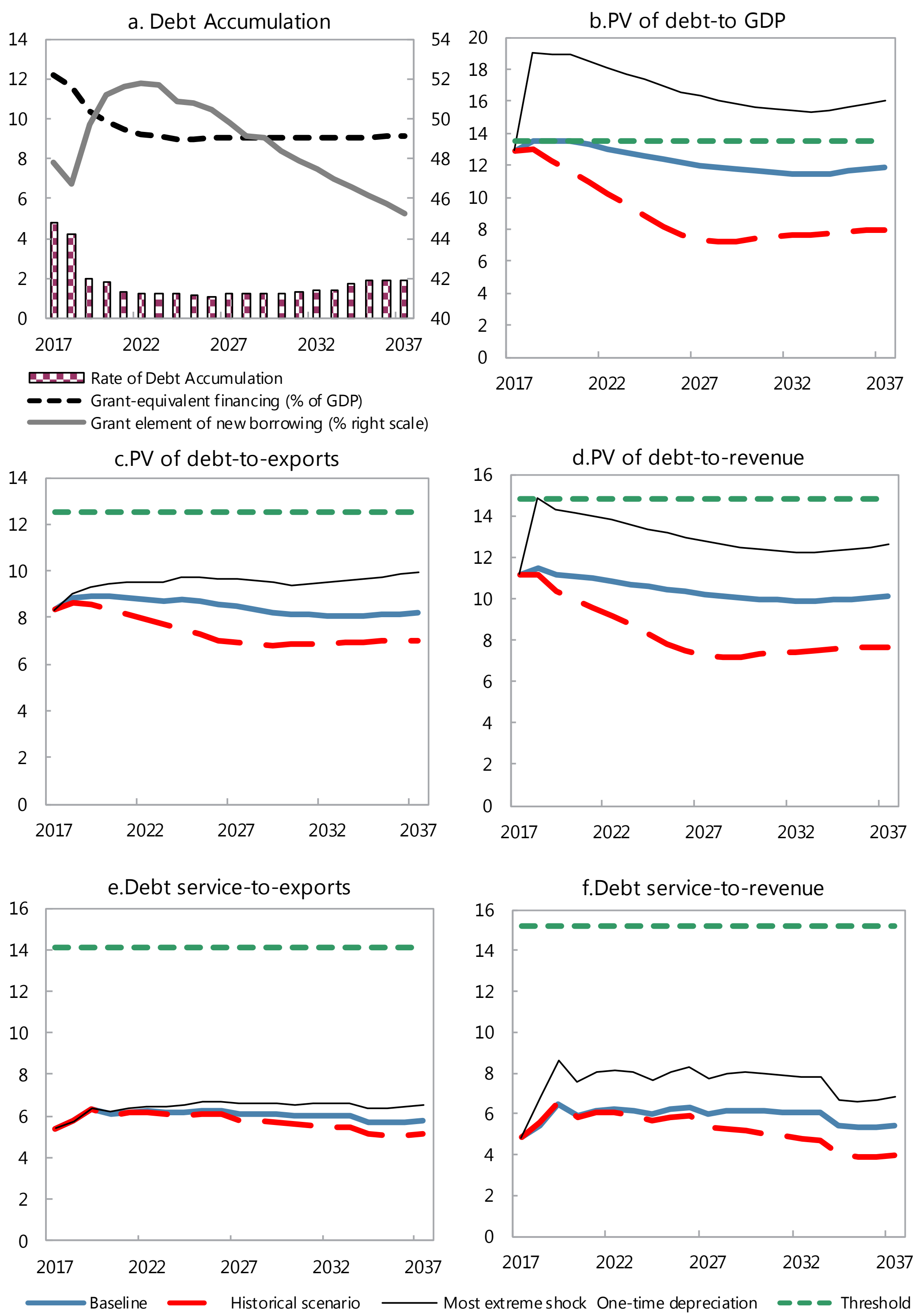
Figure 1.1. Vanuatu: Indicators of Public and Publicly Guaranteed External Debt under Alternatives Scenarios 2017–37 1/



Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio on or before 2027. In figure b. it corresponds to a One-time depreciation shock; in c. to a Terms shock; in d. to a One-time depreciation shock; in e. to a Terms shock and in figure f. to a One-time depreciation shock

Figure 1.2. Vanuatu: Probability of Debt Distress of Public and Publicly Guaranteed External Debt under Alternatives Scenarios, 2017–37 1/



Sources: Country authorities; and staff estimates and projections.

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Table 1. Vanuatu: External Debt Sustainability Framework, Baseline Scenario, 2017–37[1/]

(In percent of GDP, unless otherwise indicated)

	Actual			Historical [6/] Average	Standard [6/] Deviation	Projections									
	2014	2015	2016			2017	2018	2019	2020	2021	2022	2017-2022 Average	2027	2037	2023-2037 Average
External debt (nominal) 1/	**31.1**	**46.1**	**53.2**			**56.7**	**59.6**	**60.1**	**60.2**	**59.6**	**58.9**		**55.8**	**55.4**	
of which: public and publicly guaranteed (PPG)	16.3	30.5	37.6			40.4	43.7	44.2	44.3	43.8	43.2		40.4	40.5	
Change in external debt	8.4	15.0	7.0			3.6	2.86	0.5	0.1	-0.6	-0.7		-0.5	0.3	
Identified net debt-creating flows	-1.8	8.5	-4.2			3.2	3.27	2.7	2.3	2.3	2.2		1.4	1.4	
Non-interest current account deficit	**-0.3**	**9.7**	**3.3**	**5.8**	**3.3**	**8.1**	**8.2**	**7.7**	**7.0**	**6.8**	**6.7**	7.4	**5.2**	**4.2**	4.4
Deficit in balance of goods and services	3.9	21.4	10.7			12.1	11.8	11.0	10.1	9.7	9.4		7.6	6.5	
Exports	45.4	41.6	47.6			45.9	41.5	40.4	40.4	40.0	39.9		40.1	43.6	
Imports	49.2	62.9	58.3			58.0	53.3	51.5	50.5	49.7	49.3		47.8	50.2	
Net current transfers (negative = inflow)	-3.1	-9.8	-5.8	-4.2	2.5	-2.9	-2.5	-2.2	-2.0	-1.8	-1.6	-2.2	-1.3	-1.3	-1.3
of which: official	-2.7	-5.0	-4.8			-2.6	-2.3	-2.0	-1.8	-1.6	-1.4		-1.2	-1.2	
Other current account flows (negative = net inflow)	-1.1	-1.8	-1.6			-1.1	-1.1	-1.1	-1.1	-1.1	-1.2		-1.1	-1.0	
Net FDI (negative = inflow)	**-1.7**	**-3.8**	**-6.9**	**-5.7**	**2.4**	**-3.8**	**-3.9**	**-4.0**	**-4.0**	**-3.8**	**-3.8**	-3.9	**-3.2**	**-2.1**	-2.8
Endogenous debt dynamics 2/	**0.2**	**2.5**	**-0.6**			**-1.1**	**-1.1**	**-1.0**	**-0.8**	**-0.8**	**-0.7**		**-0.7**	**-0.8**	
Contribution from nominal interest rate	0.6	0.9	0.8			0.9	0.9	0.9	0.9	0.9	1.0		0.9	0.8	
Contribution from real GDP growth	-0.5	-0.1	-1.5			-2.0	-2.0	-1.9	-1.7	-1.7	-1.7		-1.6	-1.6	
Contribution from price and exchange rate changes	0.1	1.7	0.1			...	...	...	...	...	...		...	...	
Residual (3-4) 3/	**10.2**	**6.6**	**11.3**			**0.4**	**-0.4**	**-2.2**	**-2.1**	**-2.9**	**-2.9**		**-1.8**	**-1.0**	
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/	...	...	42.4			44.2	45.4	45.3	45.1	44.5	43.9		41.0	40.0	
In percent of exports	...	...	88.9			96.2	109.4	112.0	111.7	111.3	110.1		102.2	91.6	
PV of PPG external debt	**...**	**...**	**26.8**			**27.9**	**29.5**	**29.4**	**29.3**	**28.8**	**28.2**		**25.6**	**25.1**	
In percent of exports	**...**	**...**	**56.3**			**60.7**	**71.0**	**72.7**	**72.5**	**71.9**	**70.6**		**63.7**	**57.6**	
In percent of government revenues	**...**	**...**	**119.1**			**120.4**	**125.9**	**120.0**	**118.6**	**116.9**	**114.9**		**104.4**	**102.6**	
Debt service-to-exports ratio (in percent)	**7.4**	**8.8**	**7.3**			**8.0**	**9.5**	**11.0**	**10.3**	**10.7**	**10.8**		**10.3**	**8.7**	
PPG debt service-to-exports ratio (in percent)	**2.1**	**2.6**	**2.1**			**2.3**	**3.3**	**4.6**	**4.0**	**4.4**	**4.4**		**4.2**	**3.3**	
PPG debt service-to-revenue ratio (in percent)	**4.9**	**5.5**	**4.5**			**4.6**	**5.8**	**7.6**	**6.6**	**7.1**	**7.2**		**6.8**	**5.8**	
Total gross financing need (Millions of U.S. dollars)	10.7	74.2	-0.9			69.5	78.8	82.9	78.4	85.0	89.0		105.0	185.6	
Non-interest current account deficit that stabilizes debt ratio	-8.8	-5.3	-3.8			4.5	5.4	7.2	6.9	7.4	7.4		5.7	3.9	
Key macroeconomic assumptions															
Real GDP growth (in percent)	2.3	0.2	3.5	2.7	1.9	4.2	3.8	3.5	3.0	3.0	3.0	3.4	3.0	3.0	3.0
GDP deflator in US dollar terms (change in percent)	-0.6	-5.2	-0.3	3.6	7.4	4.6	6.0	3.4	3.3	3.3	3.3	4.0	3.3	3.3	3.3
Effective interest rate (percent) 5/	2.7	2.7	1.8	2.2	0.4	1.9	1.8	1.7	1.6	1.6	1.7	1.7	1.6	1.5	1.6
Growth of exports of G&S (US dollar terms, in percent)	-1.6	-13.0	18.1	8.2	11.6	5.1	-0.6	4.3	6.3	5.4	6.0	4.4	8.5	6.6	7.1
Growth of imports of G&S (US dollar terms, in percent)	-1.9	21.4	-4.4	9.1	15.5	8.3	1.1	3.3	4.5	4.7	5.6	4.6	5.8	7.1	6.5
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	47.8	46.7	49.7	51.2	51.6	51.8	49.8	49.8	45.2	48.4
Government revenues (excluding grants, in percent of GDP)	19.4	20.1	22.5			23.1	23.4	24.5	24.7	24.6	24.5		24.5	24.5	24.5
Aid flows (in Millions of US dollars) 7/	74.3	212.1	140.1			122.2	146.4	129.9	128.8	128.0	133.0		179.3	351.1	
of which: Grants	33.8	91.1	66.2			72.6	78.3	82.2	86.1	89.1	93.6		124.5	232.0	
of which: Concessional loans	40.6	121.0	73.9			49.7	68.1	47.7	42.7	38.9	39.4		54.8	119.1	
Grant-equivalent financing (in percent of GDP) 8/	...	...	...			12.2	11.6	10.4	9.9	9.4	9.2		9.0	9.1	9.1
Grant-equivalent financing (in percent of external financing) 8/	...	...	...			74.3	74.8	81.5	83.8	85.3	85.7		84.7	81.4	83.7
Memorandum items:															
Nominal GDP (Millions of US dollars)	815.0	773.8	798.2			869.7	956.9	1023.8	1089.6	1159.5	1234.0		1684.4	3138.3	
Nominal dollar GDP growth	1.6	-5.0	3.1			9.0	10.0	7.0	6.4	6.4	6.4	7.5	6.4	6.4	6.4
PV of PPG external debt (in Millions of US dollars)			206.9			245.2	281.8	300.8	319.0	333.5	347.4		430.9	788.3	
(PVt-PVt-1)/GDPt-1 (in percent)						4.8	4.2	2.0	1.8	1.3	1.2	2.6	1.3	1.9	1.4
Gross workers' remittances (Millions of US dollars)	3.5	37.3	8.0			2.0	2.0	2.1	2.1	2.2	2.2		2.4	3.0	
PV of PPG external debt (in percent of GDP + remittances)	...	...	26.5			27.8	29.4	29.3	29.2	28.7	28.1		25.5	25.1	
PV of PPG external debt (in percent of exports + remittances)	...	...	55.1			60.4	70.6	72.3	72.1	71.6	70.3		63.5	57.4	
Debt service of PPG external debt (in percent of exports + remittanc	...	...	2.1			2.3	3.3	4.6	4.0	4.4	4.4		4.2	3.3	

Sources: Country authorities; and staff estimates and projections.

1/ Includes both public and private sector external debt.

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

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

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. Vanuatu: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2017–2037

(In percent)

	Projections							
	2017	2018	2019	2020	2021	2022	**2027**	2037
PV of debt-to GDP ratio								
Baseline	28	29	29	29	29	28	**26**	25
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2017-2037 1/	28	28	26	25	23	21	**11**	13
A2. New public sector loans on less favorable terms in 2017-2037 2	28	31	33	33	34	34	**35**	41
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2018-2019	28	30	31	31	30	30	**27**	27
B2. Export value growth at historical average minus one standard deviation in 2018-2019 3/	28	30	32	32	31	31	**28**	26
B3. US dollar GDP deflator at historical average minus one standard deviation in 2018-2019	28	32	35	35	34	33	**30**	30
B4. Net non-debt creating flows at historical average minus one standard deviation in 2018-2019 4/	28	30	31	31	30	29	**27**	26
B5. Combination of B1-B4 using one-half standard deviation shocks	28	31	32	32	31	31	**28**	28
B6. One-time 30 percent nominal depreciation relative to the baseline in 2018 5/	28	41	41	41	40	39	**36**	35
PV of debt-to-exports ratio								
Baseline	61	71	73	72	72	71	**64**	58
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2017-2037 1/	61	68	65	61	57	52	**28**	30
A2. New public sector loans on less favorable terms in 2017-2037 2	61	76	80	83	84	85	**87**	93
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2018-2019	61	71	73	73	72	71	**64**	58
B2. Export value growth at historical average minus one standard deviation in 2018-2019 3/	61	75	88	88	87	86	**77**	66
B3. US dollar GDP deflator at historical average minus one standard deviation in 2018-2019	61	71	73	73	72	71	**64**	58
B4. Net non-debt creating flows at historical average minus one standard deviation in 2018-2019 4/	61	73	76	76	75	74	**66**	59
B5. Combination of B1-B4 using one-half standard deviation shocks	61	67	69	68	68	67	**60**	56
B6. One-time 30 percent nominal depreciation relative to the baseline in 2018 5/	61	71	73	73	72	71	**64**	58
PV of debt-to-revenue ratio								
Baseline	120	126	120	119	117	115	**104**	103
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2017-2037 1/	120	120	107	100	92	84	**46**	54
A2. New public sector loans on less favorable terms in 2017-2037 2	120	134	133	136	137	139	**143**	166
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2018-2019	120	130	127	125	124	121	**110**	108
B2. Export value growth at historical average minus one standard deviation in 2018-2019 3/	120	129	131	129	128	125	**114**	106
B3. US dollar GDP deflator at historical average minus one standard deviation in 2018-2019	120	139	142	140	139	136	**124**	121
B4. Net non-debt creating flows at historical average minus one standard deviation in 2018-2019 4/	120	129	125	124	122	120	**109**	104
B5. Combination of B1-B4 using one-half standard deviation shocks	120	132	130	129	127	125	**114**	115
B6. One-time 30 percent nominal depreciation relative to the baseline in 2018 5/	120	176	167	165	163	160	**146**	143

Table 2. Vanuatu: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2017–2037 (concluded)

(In percent)

	Projections							
	2017	2018	2019	2020	2021	2022	2027	2037
Debt service-to-exports ratio								
Baseline	2	3	5	4	4	4	**4**	3
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2017-2037 1/	2	3	5	4	4	4	**3**	2
A2. New public sector loans on less favorable terms in 2017-2037 2	2	3	5	4	5	5	**5**	5
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2018-2019	2	3	5	4	4	4	**4**	3
B2. Export value growth at historical average minus one standard deviation in 2018-2019 3/	2	3	5	5	5	5	**5**	4
B3. US dollar GDP deflator at historical average minus one standard deviation in 2018-2019	2	3	5	4	4	4	**4**	3
B4. Net non-debt creating flows at historical average minus one standard deviation in 2018-2019 4/	2	3	5	4	4	4	**4**	3
B5. Combination of B1-B4 using one-half standard deviation shocks	2	3	5	4	4	4	**4**	3
B6. One-time 30 percent nominal depreciation relative to the baseline in 2018 5/	2	3	5	4	4	4	**4**	3
Debt service-to-revenue ratio								
Baseline	5	6	8	7	7	7	**7**	6
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2017-2037 1/	5	6	8	7	7	7	**6**	3
A2. New public sector loans on less favorable terms in 2017-2037 2	5	6	8	7	8	8	**9**	9
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2018-2019	5	6	8	7	8	8	**7**	6
B2. Export value growth at historical average minus one standard deviation in 2018-2019 3/	5	6	8	7	7	7	**7**	6
B3. US dollar GDP deflator at historical average minus one standard deviation in 2018-2019	5	6	9	8	8	9	**8**	7
B4. Net non-debt creating flows at historical average minus one standard deviation in 2018-2019 4/	5	6	8	7	7	7	**7**	6
B5. Combination of B1-B4 using one-half standard deviation shocks	5	6	9	7	8	8	**8**	6
B6. One-time 30 percent nominal depreciation relative to the baseline in 2018 5/	5	8	11	9	10	10	**10**	8
Memorandum item:								
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	47	47	47	47	47	47	**47**	47

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.

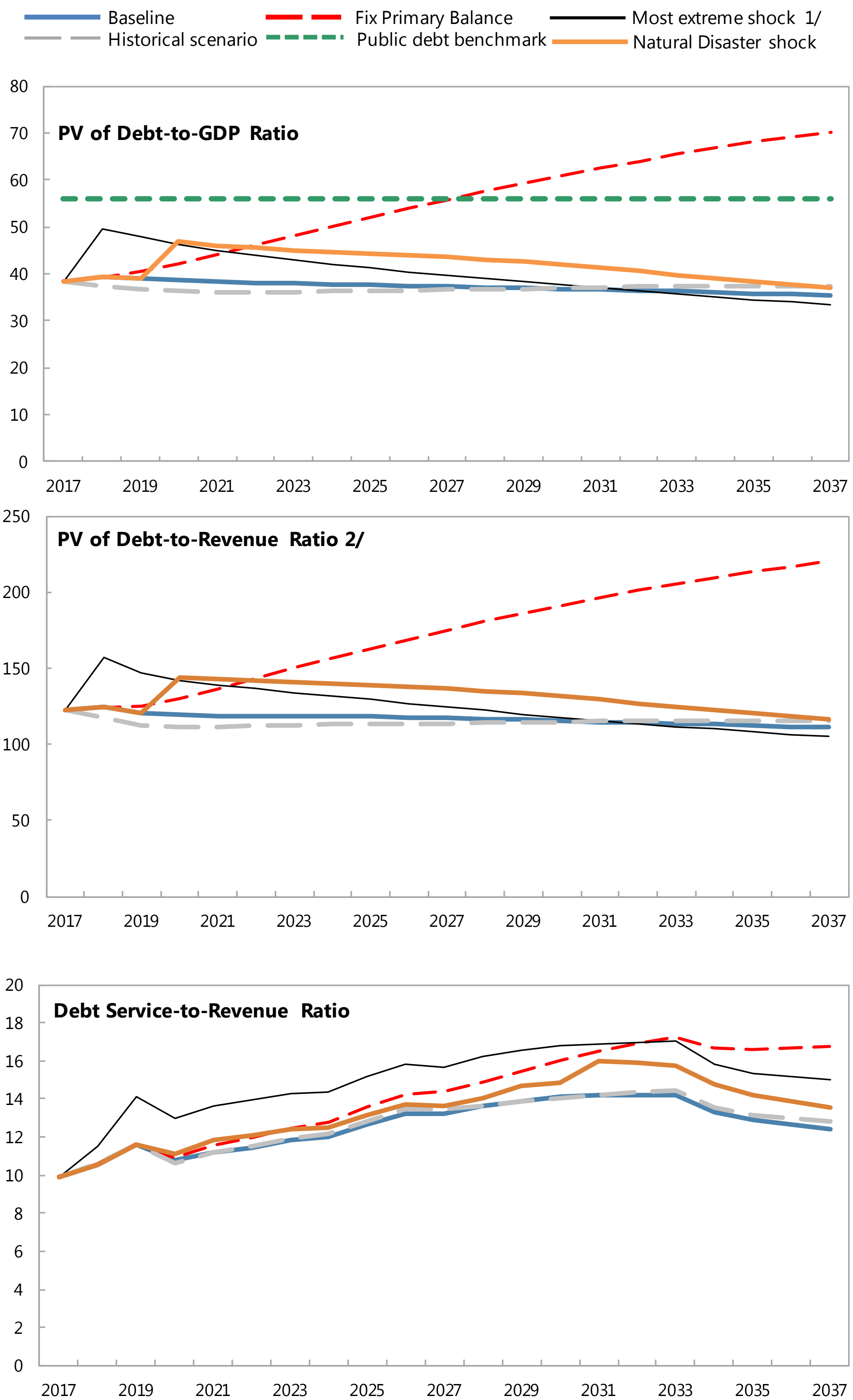
3/ Exports values are assumed to remain permanently at the lower level, but the current account as a share of GDP is assumed to return to its baseline level after the shock (
an offsetting adjustment in import levels).

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.

Figure 2. Vanuatu: Indicators of Public Debt under Alternatives Scenarios 2017–2037 1/



Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio on or before 2027.

2/ Revenues are defined inclusive of grants.

Table 3. Vanuatu: Public Sector Debt Sustainability Framework, Baseline Scenario, 2017–2037

(In percent of GDP, unless otherwise indicated)

	Actual			Average 5/	Standard Deviation 5/	Estimate	Projections								
	2014	2015	2016			2017	2018	2019	2020	2021	2022	2017-22 Average	2027	2037	2023-37 Average
Public sector debt 1/	28.7	42.4	48.8			51.0	53.7	53.9	53.8	53.3	53.1		52.1	50.8	
of which: foreign-currency denominated	16.3	30.5	37.6			40.4	43.7	44.2	44.3	43.8	43.2		40.4	40.5	
Change in public sector debt	5.6	13.7	6.4			2.2	2.7	0.2	-0.1	-0.5	-0.2		-0.2	-0.1	
Identified debt-creating flows	4.7	9.3	4.9			2.1	3.9	0.8	0.3	-0.2	-0.2		-0.2	-0.1	
Primary deficit	4.2	8.7	5.1	2.1	3.1	6.5	6.9	3.2	2.5	2.0	1.9	3.8	1.8	1.8	1.8
Revenue and grants	23.5	31.9	30.8			31.5	31.6	32.5	32.6	32.3	32.1		31.9	31.9	
of which: grants	4.1	11.8	8.3			8.3	8.2	8.0	7.9	7.7	7.6		7.4	7.4	
Primary (noninterest) expenditure	27.7	40.6	35.9			37.9	38.5	35.8	35.1	34.2	34.0		33.7	33.7	
Automatic debt dynamics	0.4	0.6	-0.2			-4.4	-3.0	-2.4	-2.2	-2.2	-2.1		-2.0	-1.9	
Contribution from interest rate/growth differential	-0.4	-0.2	-1.3			-1.8	-2.0	-1.8	-1.6	-1.6	-1.6		-1.4	-1.4	
of which: contribution from average real interest rate	0.1	-0.2	0.1			0.2	-0.1	0.0	0.0	0.0	0.0		0.1	0.1	
of which: contribution from real GDP growth	-0.5	0.0	-1.4			-2.0	-1.9	-1.8	-1.6	-1.6	-1.6		-1.5	-1.5	
Contribution from real exchange rate depreciation	0.8	0.9	1.1			-2.6	-1.1	-0.6	-0.6	-0.6	-0.6		-0.5	-0.5	
Other identified debt-creating flows	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 relief (HIPC and other)	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Other (specify, e.g. bank recapitalization)	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Residual, including asset changes	0.9	4.4	1.5			0.1	-1.2	-0.6	-0.3	-0.2	0.0		0.0	0.0	
Other Sustainability Indicators															
PV of public sector debt	...	...	38.0			38.4	39.4	39.1	38.8	38.3	38.1		37.3	35.4	
of which: foreign-currency denominated	...	...	26.8			27.9	29.5	29.4	29.3	28.8	28.2		25.6	25.1	
of which: external	...	...	26.8			27.9	29.5	29.4	29.3	28.8	28.2		25.6	25.1	
PV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...	
Gross financing need 2/	7.2	11.7	8.1			9.6	10.2	7.0	6.0	5.6	5.6		6.0	5.8	
PV of public sector debt-to-revenue and grants ratio (in percent)	...	...	123.4			122.0	124.9	120.3	118.9	118.7	118.8		117.0	110.9	
PV of public sector debt-to-revenue ratio (in percent)	...	...	169.0			166.0	168.6	159.7	157.0	155.7	155.6		152.3	144.4	
of which: external 3/	...	...	119.1			120.4	125.9	120.0	118.6	116.9	114.9		104.4	102.6	
Debt service-to-revenue and grants ratio (in percent) 4/	12.5	9.3	9.9			9.9	10.6	11.6	10.8	11.2	11.5		13.2	12.4	
Debt service-to-revenue ratio (in percent) 4/	15.2	14.8	13.5			13.5	14.2	15.4	14.3	14.7	15.0		17.2	16.1	
Primary deficit that stabilizes the debt-to-GDP ratio	-1.3	-5.0	-1.3			4.3	4.2	3.0	2.5	2.4	2.1		2.0	1.9	
Key macroeconomic and fiscal assumptions															
Real GDP growth (in percent)	2.3	0.2	3.5	2.7	1.9	4.2	3.8	3.5	3.0	3.0	3.0	3.4	3.0	3.0	3.0
Average nominal interest rate on forex debt (in percent)	1.7	2.6	1.4	1.6	0.4	1.5	1.4	1.3	1.3	1.3	1.4	1.4	1.3	1.2	1.2
Average real interest rate on domestic debt (in percent)	3.1	-0.9	3.6	2.4	1.8	1.8	0.7	2.1	2.2	2.3	2.4	1.9	3.0	3.3	3.1
Real exchange rate depreciation (in percent, + indicates depreciation)	6.8	5.4	3.8	-0.1	7.3	-7.2	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	2.0	4.5	1.8	3.2	2.0	3.1	4.8	3.4	3.3	3.3	3.3	3.5	3.3	3.3	3.3
Growth of real primary spending (deflated by GDP deflator, in percent)	35.6	46.7	-8.7	7.4	18.2	10.2	5.3	-3.8	1.0	0.6	2.2	2.6	2.9	3.1	2.9
Grant element of new external borrowing (in percent)	...	...	...	...	...	47.8	46.7	49.7	51.2	51.6	51.8	49.8	49.8	45.2	...

Sources: Country authorities; and staff estimates and projections.

1/ Coverage of public sector is central government and 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 4. Vanuatu: Sensitivity Analysis for Key Indicators for Public Debt, 2017–2037

	Projections							
	2017	2018	2019	2020	2021	2022	2027	2037
PV of Debt-to-GDP Ratio								
Baseline	38	39	39	39	38	38	37	35
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	38	37	37	36	36	36	37	37
A2. Primary balance is unchanged from 2017	38	39	41	42	44	46	56	70
A3. Permanently lower GDP growth 1/	38	40	40	40	39	40	42	48
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2018-2019	38	41	42	43	43	43	46	48
B2. Primary balance is at historical average minus one standard deviations in 2018-2019	38	39	39	39	38	38	37	35
B3. Combination of B1-B2 using one half standard deviation shocks	38	38	39	39	39	39	41	43
B4. One-time 30 percent real depreciation in 2018	38	49	48	46	45	44	40	33
B5. 10 percent of GDP increase in other debt-creating flows in 2018	38	45	44	44	43	43	41	38
PV of Debt-to-Revenue Ratio 2/								
Baseline	122	125	120	119	119	119	117	111
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	122	118	112	111	111	112	114	116
A2. Primary balance is unchanged from 2017	122	124	125	130	136	144	175	220
A3. Permanently lower GDP growth 1/	122	125	121	121	122	123	129	147
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2018-2019	122	129	129	129	131	133	141	149
B2. Primary balance is at historical average minus one standard deviations in 2018-2019	122	122	121	119	119	119	117	111
B3. Combination of B1-B2 using one half standard deviation shocks	122	121	119	119	120	122	127	132
B4. One-time 30 percent real depreciation in 2018	122	157	147	142	139	137	124	105
B5. 10 percent of GDP increase in other debt-creating flows in 2018	122	141	136	134	133	133	130	119
Debt Service-to-Revenue Ratio 2/								
Baseline	10	11	12	11	11	11	13	12
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	10	11	12	11	11	11	13	13
A2. Primary balance is unchanged from 2017	10	11	12	11	12	12	14	17
A3. Permanently lower GDP growth 1/	10	11	12	11	11	12	14	14
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2018-2019	10	11	12	11	12	12	14	14
B2. Primary balance is at historical average minus one standard deviations in 2018-2019	10	11	12	11	11	11	13	12
B3. Combination of B1-B2 using one half standard deviation shocks	10	11	12	11	11	12	14	13
B4. One-time 30 percent real depreciation in 2018	10	11	14	13	14	14	16	15
B5. 10 percent of GDP increase in other debt-creating flows in 2018	10	11	12	11	12	12	13	13

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.