EXECUTIVE BOARD MEETING

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To: Members of the Executive Board

From: The Secretary

Subject: **Papua New Guinea—Staff Report for the 2019 Article IV Consultation, and Request for a Staff-Monitored Program—Debt Sustainability Analysis**

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Prepared By:	The staffs of the Fund and the International Development Association
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***Unless an objection from the authorities is received prior to the conclusion of the Board's consideration, the document will be published.**

PAPUA NEW GUINEA

February 21, 2020

STAFF REPORT FOR THE 2019 ARTICLE IV CONSULTATION AND REQUEST FOR A STAFF-MONITORED PROGRAM—DEBT SUSTAINABILITY ANALYSIS

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

Risk of external debt distress	*Moderate*
Overall risk of debt distress	*Moderate*
Granularity in the risk rating	*Limited space to absorb shocks*
Application of Judgement	*Two short-lived breaches of debt service-to-revenue ratio are discounted*

The Debt Sustainability Analysis (DSA) indicates that Papua New Guinea (PNG) faces moderate risk of debt distress based on an assessment of public external debt, with limited space to absorb shocks; and moderate overall risk of public debt distress. Under the baseline scenario there are two short-lived breaches of the debt service-to-revenue ratio threshold (2020 and 2028). The long-term breach is due to the bullet payment of sovereign bond issued in 2018, and can be discounted on the ground of the expected accumulation of revenue buffers from natural resource projects. The 2020 breach is acceptable, as the projected financing plan for 2020-21 is expected to eliminate the rollover risk. Examining the debt dynamics under alternative scenarios reveals that, under the most extreme shock (export growth shock), there are multiple breaches in the threshold for the debt service-to-revenue ratio. Although the assessment of moderate risk is unchanged from the previous DSA (end-2017 debt), the limited space to absorb shocks highlights the need for the government to strengthen its debt position through fiscal consolidation and to change the composition of its liabilities towards lower-cost and longer-term debt.

[1] This DSA was prepared jointly with the World Bank, in accordance with the revised Debt Sustainability Framework for low-income countries approved by the Executive Boards of the IMF and the IDA in December 2017. PNG's Composite Indicator score based on the October World Economic Outlook and 2019 CPIA measure indicates that the debt-carrying capacity is 'medium'. Thresholds for external debt-burden indicators are set at levels compatible with the new framework: PV of PPG debt/exports (180), PV of PPG debt/GDP (40), debt service/exports (15) and debt service to revenue (18). PNG is classified as an IDA blend economy.

PUBLIC DEBT COVERAGE

1. **Papua New Guinea (PNG)'s coverage of public sector debt includes the central government, local government debt, and debt explicitly guaranteed by the central government.** The stock of central government guaranteed loans is estimated to have reached 14.1 billion Kina (18% of GDP) at the end of 2018 (Text Table 1). Although the government has recognized and taken over the servicing of three SOE project loans (Solwara, Motu-Kea Port and NCD Roads) as central government debt, the magnitude of all the debt obligations is uncertain. Also, the debt figure does not fully capture implicit government guaranteed debts of state-owned enterprises (SOEs) and unfunded superannuation liabilities, relating to pensions (Text Table 2 and 3). Thus, the contingent liability shock, equivalent to 17 percent of GDP (Text Table 3), is included in this analysis to account for risks from possible government guarantees.

Text Table 1. Government Guaranteed Loans 2018
(In millions of Kina)

Loan Details	Outstanding	Status
Domestic Loans	**1,225.79**	
Solwara Loan Guarantee	374.80	Materialized
KCH Motu Kea Port Relocation	600.00	Materialized
NCDC Roads (Original Facility)	105.50	Materialized
NCDC Roads (Extension 2017)	88.82	Materialized
NCDC Roads (2nd Extension 2017)	56.67	Materialized
External Loans	**12,908.40**	
PASO Loan Guarantee	1.26	Completed
Finance Contract Agreement - 26.04.95	80.80	Completed
Finance Contract Agreement - 28.06.96	96.19	Completed
Agreement 27.07.95	88.49	Completed
Completion Guarantee for PNG LNG	5,469.06	Completed
State Equity Financing for PNG LNG	6,146.41	In dispute
Counter Guarantee for PNG LNG	902.48	In dispute
Central Diary Limited (2016)	123.70	In dispute
Total Guaranteed Loans	**14,134.19**	

Source: Department of Treasury, Papua New Guinea

Text Table 2. Debt Coverage under Baseline Scenario

	Subsectors of the public sector	Check box
1	Central government	X
2	State and local government	X
3	Other elements in the general government	
4	o/w: Social security fund	
5	o/w: Extra budgetary funds (EBFs)	
6	Guarantees (to other entities in the public and private sector, including to SOEs)	X
7	Central bank (borrowed on behalf of the government)	
8	Non-guaranteed SOE debt	

Text Table 3. Contingent Liability

1	The country's coverage of public debt	The central, state, and local governments, government-guaranteed debt		
		Default	Used for the analysis	Reasons for deviations from the default settings
2	Other elements of the general government not captured in 1.	0 percent of GDP	3	Unfunded pension liabilities.
3	SoE's debt (guaranteed and not guaranteed by the government) 1/	2 percent of GDP	9	SOE sovereign guarantee in dispute.
4	PPP	35 percent of PPP stock	0.00	
5	Financial market (the default value of 5 percent of GDP is the minimum value)	5 percent of GDP	5	
	Total (2+3+4+5) (in percent of GDP)		17.0	

1/ The default shock of 2% of GDP will be triggered for countries whose government-guaranteed debt is not fully captured under the country's public debt definition (1.). If it is already included in the government debt (1.) and risks associated with SoE's debt not guaranteed by the government is assessed to be negligible, a country team may reduce this to 0%.

2. **This data coverage largely reflects the weakness in transparency and accountability of Statutory Authorities and SOEs.** The authorities are currently reviewing the external loan guarantees and superannuation liabilities. In the context of the Staff Monitoring Program (SMP), the authorities are initiating a program to reform SOEs with a view to improving financial standing of the SOEs sector. This program will include a detailed review of SOE debt and government guarantees.

BACKGROUND ON DEBT

3. **PNG's public and external debt burden remains moderate relative to peer countries, but debt and potential risks are increasing.** Unanticipated revenue declines due to falling commodity prices and difficulties in controlling government expenditure in recent years, especially personnel emoluments, have led to larger budget deficits and higher public debt. Public debt rose from 32.5 percent of GDP in 2017 to 36.8 percent of GDP at the end of 2018 – well above the government's medium-term target of 30 percent – and interest payments increased by 22 percent in nominal terms. While spending over-runs and weak revenue collection contributed to fiscal slippage in 2018, the significant increase in debt stock largely reflected the revaluation of foreign currency debt in line with best international practice and the realization of state loan guaranteed loans for which interests were being paid from the central government. The budget may remain exposed to unfunded superannuation liabilities, relating to pensions, estimated at around 2 billion kina (3 percent of 2018 GDP) and government arrears. Since 2018, the deficit financing has turned to external sources as commercial banks and superannuation funds are nearing internal limits for holding government securities.

4. **The recent increase in external debt is mainly due to accelerated borrowing from non-Paris Club bilateral and commercial creditors (Text Table 4).** The share of Chinese loans (Bank of China and the Export-Import Bank of China) has increased sharply from 1.2 percent of total public external debt in 2010 to 20.0 percent in 2018. The syndicated loans from Credit Suisse and a sovereign bond issued in October 2018 have also increased the share of commercial debt. Two large creditors for external public debt as of end-2018 were the Asian Development Bank and the Export-Import Bank of China (Text Figure 1). Private sector external debt has declined continuously since the liquified natural gas (LNG) sector started to repay its debt. Despite a large current account surplus, which reflects LNG exports, these projects do not bring in enough foreign exchange to the country due to the project agreements. Therefore, the increased PPG external debt has posed a risk as the burden of external debt service has risen.

Text Table 4. External Public Debt by Creditor Groups

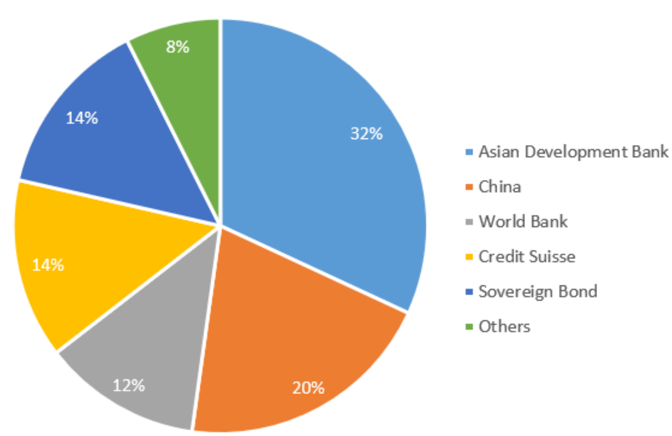
(In millions of U.S. dollars)

	2015	2016	2017	2018	2019	2020
	Est.	Est.	Est.	Est.	Proj.	
Multilateral	1,086	1,164	1,272	1,632	1,788	2,406
Bilateral Paris Club[1]	113	126	131	139	426	1,341
Bilateral Non-Paris Club	299	408	538	724	706	684
Commercial[2]	-	229	348	1,075	1,082	846
Total	1,498	1,928	2,289	3,569	4,001	5,276

Source: Department of Treasury and IMF staff projections.

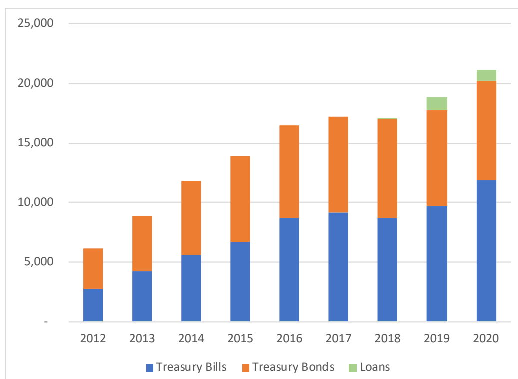
1/ 2019 includes $300 million loan from Export Finance Australia with an interest rate of 2.5% and a maturity of 1 year.
2/ 2018 includes the sovereign bond issued in October 2018 (maturity of 10 years with an interest rate of 8.4% and the syndicated loans from Credit Suisse (maturity of 3 years with an interest rate of 9%.)

Text Figure 1. External Public Debt by Creditors in 2018



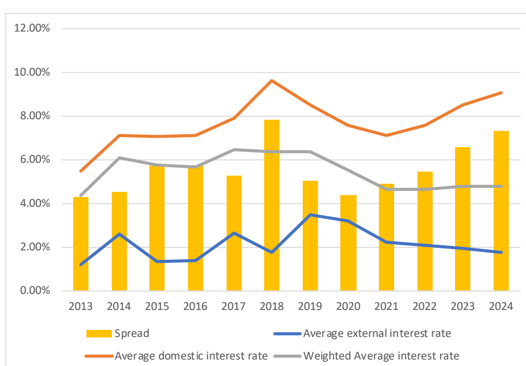
5. The increased issuance of external debt has not been matched by improvement in the domestic debt profile. Although the funds from the sovereign bond were intended to be used to reduce the government's short-term domestic debt, the stock of domestic debt showed only a marginal decline at the end of 2018 (Text Figure 2) and the debt profile continues to be exposed to interest rate, currency and rollover risks. The positive real GDP growth helped to more than offset the debt creating flows caused by unfavorable real interest rates over the past few years. However, the higher financing needs along with the increasing nominal interest rate as well as the wider interest rate spread (Text Figure 3) indicate that the trend may reverse and could create further pressure for the debt ratio to rise further in the near term. Meanwhile, refinancing risks and rollover risks remain high given the concentration of large external debt service payments in the short term and the shortening of the average maturity of government domestic financing.

Text Figure 2. Composition of Domestic Debt 2012-2020
(in millions of Kina)



Source: Department of Treasury and IMF staff projections.

Text Figure 3. Weighted Average Interest Rate and Spread 2013-2024



Source: Department of Treasury and IMF staff projections.

BACKGROUND ON MACRO FORECASTS

6. **PNG's medium-term growth prospects will largely be driven by the non-resource sector and supported by easing exchange rate restrictions.** Box 1 summarizes the medium-term macroeconomic framework underlying this Debt Sustainability Analysis (DSA), and Text Table 5 compares previous and current DSAs. Real GDP is projected to grow by 5 percent in 2019, underpinned by recovery in energy and mineral production following the earthquake in early 2018, while non-resource growth is expected to remain at 2.9 percent. In the absence of major new resource projects, real GDP growth is expected to moderate to around 3 percent in the medium-term. The expected easing of foreign exchange restrictions and the potential for major new gas and mining projects provide an upside risk to the outlook. The large current account surplus continues to be offset by debt service and dividend payments associated with resource sector investments, and is expected to narrow slightly in 2019, reflecting a weaker performance in non-resource sector exports, despite a compression in imports due to foreign exchange shortages. Going forward, a gradual narrowing is expected in the medium-term as the foreign exchange backlog is cleared, and imports recover to their normal levels.

7. **Fiscal deficits are expected to have widened in 2019 before resuming a downward trend.** The primary fiscal balance is projected to deteriorate significantly from a deficit of 0.2 percent of GDP in 2018 to a deficit of 1.7 percent of GDP in 2019 due to continued spending over-runs and a disappointing outcome for revenues. On the revenue side, collection of personal and corporate income taxes, and mining and petroleum taxes, is well below the level of last year, reflecting a subdued economy and lower commodity prices. Non-tax revenue is also expected to underperform as SOE dividends and other one-off sources of revenues are projected to come in below budget. On the expenditure side, the main over-runs are due to personnel emoluments, which are expected to come in at around 1 percent of GDP over budget. The large deficit is expected to be financed mainly through multilateral and bilateral external loans.

8. **The weak fiscal position is expected to gradually reverse in the context of a sustained program of fiscal consolidation.** The primary surplus is projected to move into balance by 2022 and to improve to a surplus of 0.2 percent of GDP by the end of the 2024 assuming the implementation of the proposed reforms aimed at restoring fiscal sustainability. Some of the key measure include:

a. **Realistic budgeting for personnel costs.** Systematic underestimation of wage and personnel costs has resulted in arrears, budget over-runs, and the need for ad hoc spending cuts, often to the development budget.

b. **Paying down retirement costs to reduce public employment.** Currently there are approximately 4000 public workers over the retirement age still on the payroll because the authorities have not budgeted for the payment of separation costs. Allowing these workers to retire has an immediate budgetary cost but will result in savings going forward.

c. **Limiting the growth of government payroll.** This is to be achieved through strict implementation of the government hiring freeze, including limits on the number of unattached workers and new hires exempted from the freeze, and the elimination of unbudgeted and unlawful payments, particularly supplements and allowances.

d. **A detailed audit of government employment and payroll practices by an independent organization.** This is to identify inappropriate hiring practices and payments and to develop a program of reforms to better track and control public service hiring and compensation practices.

9. The baseline projections are reasonable (Figure 4). The growth projections are relatively higher than suggested by the alternative fiscal-growth multiplier analysis due to a strong rebound in growth following the earthquake in 2018. The baseline fiscal adjustment in the primary balance seems credible as it does not fall in the upper quartile of the distribution of past adjustments. Meanwhile, the contribution of public investment to growth also seems reasonable in comparison to historical contributions.

Text Table 5. Macroeconomic Forecast and Assumptions

	Real GDP Growth (percent)		GDP Deflator Inflation (percent)		Current Account (percent of GDP)		Primary Balance (percent of GDP)	
Year	Previous	Current	Previous	Current	Previous	Current	Previous	Current
2016	1.6	4.1	2.7	3.9	23.7	26.6	-3.1	-2.8
2017	2.5	3.5	7.1	7.7	23.9	27.2	-0.4	-0.4
2018	0.0	-0.8	8.1	10.1	22.8	25.9	-0.5	-0.2
2019	3.8	5.0	2.4	1.9	23.0	24.2	0.2	-1.7
2020	3.1	2.0	2.0	6.8	21.4	25.0	0.8	-2.7
2021	3.4	2.8	2.4	6.5	20.3	24.9	1.3	-1.9
2022	3.5	2.9	2.5	6.8	19.2	23.2	1.4	-0.1
2023	3.8	3.2	1.2	4.2	18.4	22.3	1.4	0.2
2024	3.9	3.3	7.8	3.0	15.5	21.4	1.1	0.2

COUNTRY CLASSIFICATION AND DETERMINATION OF SCENARIO STRESS TESTS

10. PNG's composite indicator index as calculated under the revised Low Income Country Debt Sustainability Framework (LIC-DSF) remained unchanged from past years with PNG's debt-carrying capacity classified as medium (Text Table 6). The current composite indicator is calculated based on the October 2019 World Economic Outlook and 2019 CPIA index. The medium classification implies that the benchmark for the present value of total public debt is at 55 percent of GDP (Table 7). Since PNG is a resource-rich economy relying on commodity exports, commodity price shocks are included in the tailored stress tests.

Text Table 6. Calculation of the Composite Indicator

Components	Coefficients (A)	10-year average values (B)	CI Score components (A*B) = (C)	Contribution of components
CPIA	0.385	3.013	1.16	42%
Real growth rate (in percent)	2.719	4.525	0.12	4%
Import coverage of reserves (in percent)	4.052	48.888	1.98	71%
Import coverage of reserves^2 (in percent)	-3.990	23.900	-0.95	-34%
Remittances (in percent)	2.022	0.016	0.00	0%
World economic growth (in percent)	13.520	3.499	0.47	17%
CI Score			2.784	100%
CI rating			Medium	

Text Table 7. Public and Publicly Guaranteed (PPG) External Debt Thresholds and Total Public Benchmarks

EXTERNAL debt burden thresholds	Weak	Medium	Strong
PV of debt in % of			
Exports	140	180	240
GDP	30	40	55
Debt service in % of			
Exports	10	15	21
Revenue	14	18	23
TOTAL public debt benchmark	Weak	Medium	Strong
PV of total public debt in percent of GDP	35	55	70

EXTERNAL DEBT

11. The PPG external debt ratios point to a moderate risk of external debt distress. Although the PPG external debt service-to-revenue ratio shows two breaches in the baseline scenario (Figure 1), reflecting large repayments in 2020 and repayment of the recently issued sovereign bond in 2028, the remaining indicators stay well below the indicative threshold. While the projected financing for 2020 is expected to reduce the rollover risk, the bullet payment falling in 2028 is a single short-lived breach (1-year) and is assumed to be discounted as it is highly likely to be supported by PNG's large revenue buffers from future expected resource projects. In addition, the historical scenario is not considered as an indication of future risks although it shows substantial threshold breaches, as has been the case in past DSAs. This is because the historical scenario is grounded in large current account deficits recorded in the past associated with the construction phase for PNG LNG project. The PNG LNG-related debt was largely backed by expected cash flows from the LNG project.

12. There are two breaches of thresholds under the most extreme shock scenario. For the present value of external debt to GDP ratio, the most extreme shock scenario corresponds to a shock to export growth. In this case, the threshold is breached in 2021 and the ratio descends slowly towards the threshold starting from 2025. Similarly, for the debt service to revenue ratio, the most extreme shock is exports. In this case, the ratio breaches the threshold multiple times in the short-run and long-run. However, both the present value of external debt to export ratio and the external debt service to exports ratio remain well below the indicative threshold under the most extreme scenario. These results support the assessment of moderate-risk of debt distress. The relatively weak non-resource sector makes the economy more vulnerable to external shocks.

13. Meanwhile, market-financing risk indicators signal high rollover and liquidity risks. The sovereign bond issued in October 2018 performed weaker than most frontier market bonds, with spread around 585 basis points in December 2019, indicating potential rollover risks amid tight global financial conditions (Figure 5). Furthermore, the growing share of external debt exposes PNG to external financing shocks and liquidity risks. Additionally, the three-year average Gross Financing Needs (GFN), which peaks at 20% of GDP in 2019-2021, surpasses the recommended threshold of 14% of GDP. This is due to the large external debt service payments in 2020 and 2021 as well as the large share of short-term domestic debt. While a large part of the external debt services is expected to be rolled over, as a frontier market, PNG's high gross financing needs along with the widening of EMBI spread and higher domestic borrowing costs pose significant market financing risks in the near term.

PUBLIC DEBT

14. PNG's total public debt-to-GDP ratio is projected to remain well below the indicative benchmark, while it marginally breaches the benchmark under the stress test. Under the baseline scenario, the PV of public debt-to-GDP ratio decreases towards 30 percent of GDP over the long term, below the benchmark (Figure 2). However, since PNG is a commodity exporter, in the alternative scenarios with shocks to exports or shocks to commodity prices, the public debt-to-GDP ratio will breach the benchmark in the medium term (Table 4). A negative commodity price shock could reduce commodity export revenues, resulting in lower mining taxes and dividends to the government in the long term. In addition, the most extreme shock for the public debt-to-GDP ratio is the export growth shock (Figure 2), which leads to a marginal breach of the indicative benchmark in the medium term. Furthermore, liquidity risks are present as elaborated above, and unfunded superannuation liabilities represent an implicit fiscal risk for PNG.

RISK RATING AND VULNERABILITIES

15. The DSA analysis suggests that PNG's risk of external public debt distress remains moderate and the risk of distress in the overall public debt is also moderate. The moderate risk of overall public debt distress is based on a strong assumption that commercial loans that fall due in the short term will be rolled over with favorable terms. It is also supported by the assumption on the primary surplus generated from fiscal consolidation efforts by the government in the long run in the context of the IMF Staff Monitored Program. Although an upward revision to nominal GDP partly helped to improve the debt position, a weak fiscal position, reflecting the continued spending over-runs and lower revenue collection, has deteriorated the debt profile over the past few years. Meanwhile, the granular analysis in Figure 6 shows that while PNG has limited space to absorb shocks, the external debt service-to-revenue ratio breaches the threshold in 2028. Hence, the government needs to strengthen implementation of its fiscal consolidation framework, while implementing a sound debt management strategy to lower the cost of debt and extend maturities, as well as reconciling existing government liabilities and guarantees.

AUTHORITIES' VIEWS

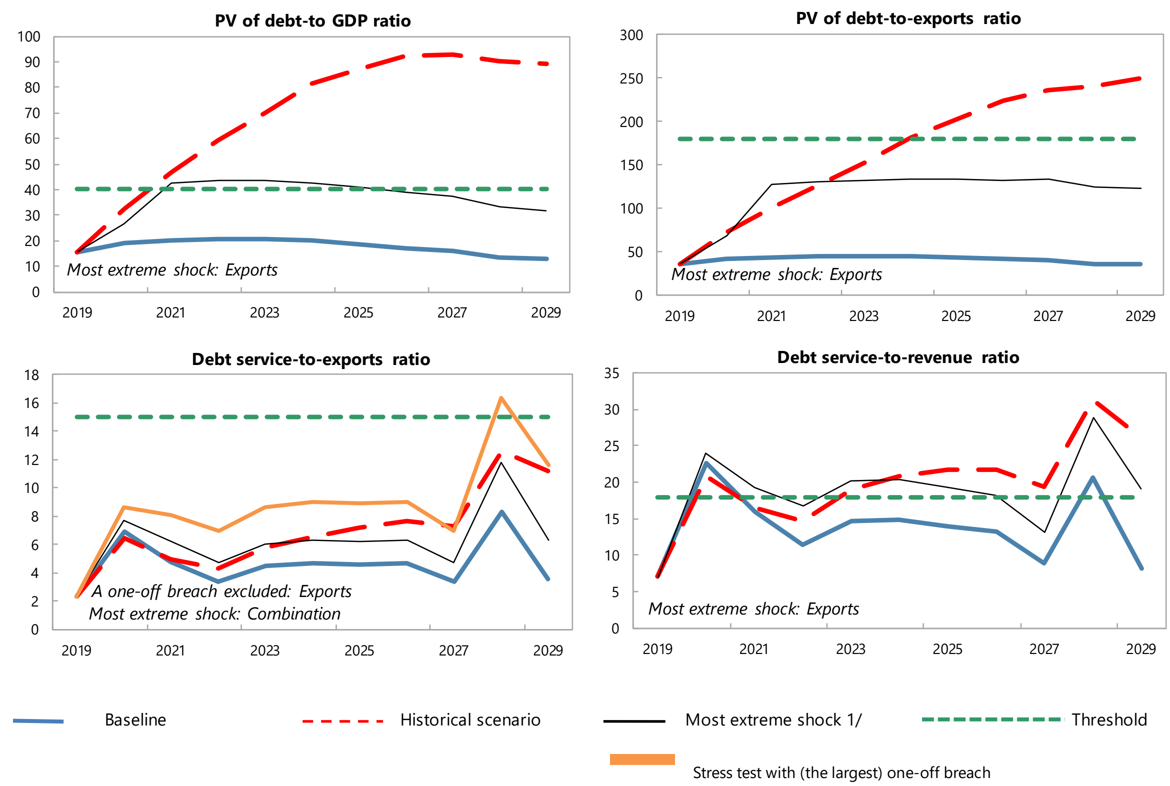
16. The authorities took note of increasing risks to debt sustainability. They emphasized the need to retire a large portion of short-term domestic debt and to rely on cheaper external sources to finance the government budget, while at the same time taking into account foreign exchange risks. They also highlighted the importance of lengthening the maturity structure of domestic debts to reduce liquidity risks. Furthermore, they recognized the importance of reviewing contingent liabilities. In this regard, the authorities have specified that, in line with Fiscal Responsibility Act (FRA) requirements, they will recognize three SOE project loans for which the government has taken over the servicing as central government debt (about 1.4 percent of GDP). In addition, they highlighted the importance of including exchange rate valuation effects when calculating the value of the external debt stock in domestic currency terms and have taken on IMF advice to revalue foreign currency debt at current exchange rates, in line with best international practice.

Box 1. Macroeconomic Assumptions Underlying the DSA Update

The macroeconomic assumptions underpinning this DSA reflect a newly revised (higher) series for GDP in 2017 and a rebound from the 2018 earthquake.

Macro Indicators	Last Historic Year	First Forecast Year	Medium- and Long-Term Averages
GDP growth	The newly published GDP series for 2017 (in November 2019) are reflected. In 2018, GDP is estimated to have contracted marginally by 0.8 percent largely reflecting the negative impact of the earthquake earlier in the year. New industry information underpinned the change in estimate (from no growth) in the 2018 DSA.	Latest industry data has been incorporated into the framework. This resulted in the real growth rate adjusted up from 3.8 percent in the 2018 DSA to 5.0 percent in this DSA.	Real GDP growth is projected to average 3.1 percent in the medium/long run, which is lower than the long-term average growth rate used for the 2018 DSA. The resource projects (the Papua LNG and other resource projects like Wafi Golpu) are upside risks to these projections.
Inflation (GDP deflator)	The actual 2017 GDP deflator was 7.7 percent in 2017. In 2018, the GDP deflator is estimated at 10.1 percent higher than the projection in the 2018 DSA (8.1 percent) due to higher commodity prices and to some extent accounting for alignment of deflator methodology between the Fund and Authorities.	GDP deflator is projected at around 1.9 percent in 2019 reflecting lower fuel and commodity prices (revised from 2.4 percent in the 2018 DSA).	The overall GDP deflator is expected to converge to around 3.0 percent in the medium-long term, and assumes some depreciation of the Kina in the medium-term (2020-2022).
Current Account	The estimated current account surplus to GDP ratio in 2018 revised upward to 25.9 percent from 22.8 percent in the 2018 DSA, reflecting better-than-expected resource exports.	The surplus is expected to recover to historical level, while increased dividend and debt service outflows will continue to weigh on current account surplus.	Gradual erosion of the current account surplus is projected as FX backlog clears and imports recover.
Fiscal Position	The primary deficit in 2018 was 0.2 percent of GDP, a little bit smaller than 0.5 percent estimated in 2018 DSA.	The primary fiscal deficit is estimated to increase to 1.7 percent of GDP in 2019 due to lower revenue and higher overall primary spending.	The primary deficit will gradually improve to a surplus, assuming fiscal consolidation by improving tax revenues and controlling government expenditures.

Figure 1. Papua New Guinea: Indicators of Public and Publicly Guaranteed External Debt Under Alternative Scenarios, 2019-2029



Customization of Default Settings	Size	Interactions
Tailored Stress		
Combined CL	Yes	
Natural disaster	No	Yes
Commodity price [2/]	No	Yes
Market financing	No	No

Note: "Yes" indicates any change to the size or interactions of the default settings for the stress tests. "n.a." indicates that the stress test does not apply.

Borrowing assumptions on additional financing needs resulting from the stress tests*	Default	User defined
Shares of marginal debt		
External PPG MLT debt	100%	
Terms of marginal debt		
Avg. nominal interest rate on new borrowing in USD	1.9%	1.9%
USD Discount rate	5.0%	5.0%
Avg. maturity (incl. grace period)	25	25
Avg. grace period	7	7

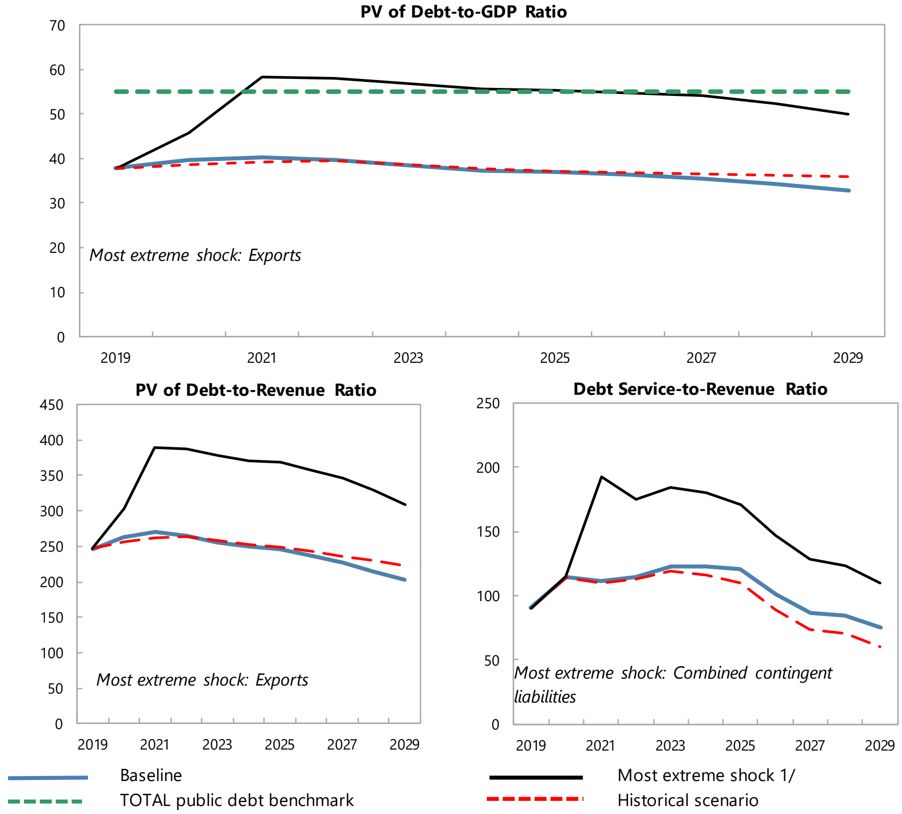
* Note: All the additional financing needs generated by the shocks under the stress tests are assumed to be covered by PPG external MLT debt in the external DSA. Default terms of marginal debt are based on baseline 10-year projections.

Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in or before 2029. The stress test with a one-off breach is also presented (if any), while the one-off breach is deemed away for mechanical signals. When a stress test with a one-off breach happens to be the most exterme shock even after disregarding the one-off breach, only that stress test (with a one-off breach) would be presented.

2/ The magnitude of shocks used for the commodity price shock stress test are based on the commodity prices outlook prepared by the IMF research department.

Figure 2. Papua New Guinea: Indicators of Public Debt Under Alternative Scenarios, 2019-2029



Borrowing assumptions on additional financing needs resulting from the stress tests*	Default	User defined
Shares of marginal debt		
External PPG medium and long-term	14%	14%
Domestic medium and long-term	17%	17%
Domestic short-term	69%	69%
Terms of marginal debt		
External MLT debt		
Avg. nominal interest rate on new borrowing in USD	1.9%	1.9%
Avg. maturity (incl. grace period)	25	25
Avg. grace period	7	7
Domestic MLT debt		
Avg. real interest rate on new borrowing	5.7%	5.7%
Avg. maturity (incl. grace period)	3	3
Avg. grace period	2	2
Domestic short-term debt		
Avg. real interest rate	4.0%	4.0%

* Note: The public DSA allows for domestic financing to cover the additional financing needs generated by the shocks under the stress tests in the public DSA. Default terms of marginal debt are based on baseline 10-year projections.

Sources: Country authorities; and staff estimates and projections.

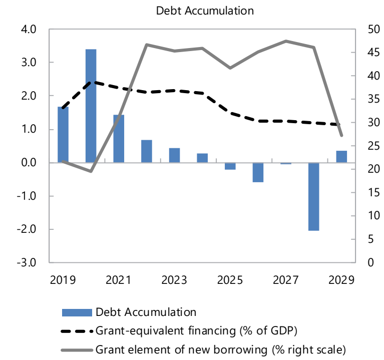
1/ The most extreme stress test is the test that yields the highest ratio in or before 2029. The stress test with a one-off breach is also presented (if any), while the one-off breach is deemed away for mechanical signals. When a stress test with a one-off breach happens to be the most exterme shock even after disregarding the one-off breach, only that stress test (with a one-off breach) would be presented.

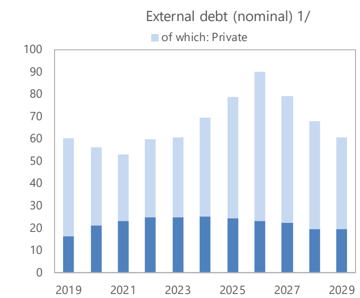
Table 1. Papua New Guinea: External Debt Sustainability Framework, Baseline Scenario, 2016-2039

(In percent of GDP, unless otherwise indicated)

	Actual			Projections								Average 8/	
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2029	2039	Historical	Projections
External debt (nominal) 1/	87.6	72.8	71.3	60.1	56.2	52.9	59.7	60.5	69.3	60.4	25.6	73.5	66.8
of which: public and publicly guaranteed (PPG)	8.5	8.8	15.2	16.5	21.1	23.3	24.6	24.9	25.0	19.4	17.9	7.8	22.2
Change in external debt	-4.6	-14.8	-1.5	-11.3	-3.8	-3.4	6.8	0.8	8.8	-7.5	-1.3		
Identified net debt-creating flows	-22.1	-33.4	-31.3	-26.2	-24.7	-24.9	-23.2	-22.7	-21.9	-11.6	-5.8	-4.1	-18.9
Non-interest current account deficit	-29.8	-30.2	-28.6	-26.7	-27.2	-26.8	-25.0	-23.7	-22.5	-11.2	-5.9	-1.5	-19.7
Deficit in balance of goods and services	-26.2	-27.5	-26.7	-24.7	-25.5	-25.3	-23.7	-23.0	-22.1	-17.3	-10.4	-2.3	-21.8
Exports	39.7	44.0	43.2	43.8	45.9	46.5	47.0	46.1	44.8	35.9	22.2		
Imports	13.5	16.5	16.5	19.1	20.4	21.1	23.3	23.1	22.7	18.5	11.9		
Net current transfers (negative = inflow)	-1.4	-1.1	-1.5	-2.3	-2.5	-2.6	-2.7	-2.4	-2.4	-1.8	-1.0	-1.1	-2.3
of which: official	-1.5	-0.5	-0.5	-1.5	-1.6	-1.7	-1.9	-1.6	-1.6	-1.2	-0.7		
Other current account flows (negative = net inflow)	-2.2	-1.6	-0.4	0.3	0.8	1.1	1.5	1.7	1.9	8.0	5.4	1.9	4.4
Net FDI (negative = inflow)	0.2	1.5	-1.2	1.4	1.4	1.5	1.6	1.4	1.4	1.0	0.6	-1.0	1.5
Endogenous debt dynamics 2/	7.4	-4.6	-1.5	-0.9	1.0	0.4	0.2	-0.4	-0.7	-1.5	-0.4		
Contribution from nominal interest rate	3.1	3.0	2.7	2.6	2.2	2.0	1.7	1.4	1.2	0.4	0.4		
Contribution from real GDP growth	-3.9	-2.8	0.6	-3.4	-1.2	-1.6	-1.5	-1.9	-1.9	-1.9	-0.8		
Contribution from price and exchange rate changes	8.2	-4.8	-4.8	...	...	...	...	...	...	...	...		
Residual 3/	17.5	18.6	29.8	14.9	20.9	21.6	30.0	23.6	30.7	4.1	4.5	9.5	17.9
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		
Sustainability indicators													
PV of PPG external debt-to-GDP ratio	...	...	14.7	15.7	19.0	20.3	20.8	20.5	19.9	12.8	9.3		
PV of PPG external debt-to-exports ratio	...	...	34.0	35.8	41.5	43.8	44.2	44.4	44.4	35.7	41.6		
PPG debt service-to-exports ratio	2.2	2.2	2.1	2.3	6.9	4.8	3.4	4.5	4.7	3.5	4.9		
PPG debt service-to-revenue ratio	6.4	6.9	5.9	7.1	22.6	15.9	11.5	14.6	14.9	8.2	6.5		
Gross external financing need (Million of U.S. dollars)	-2060.7	-3574.1	-4487.2	-3565.9	-4043.6	-4216.2	-4028.5	-3576.9	-3374.6	-378.9	-1656.2		
Key macroeconomic assumptions													
Real GDP growth (in percent)	4.1	3.5	-0.8	5.0	2.0	2.8	2.9	3.2	3.3	2.9	3.2	5.6	3.1
GDP deflator in US dollar terms (change in percent)	-8.2	5.8	7.1	-0.5	-1.8	-2.0	-1.8	0.4	1.0	3.0	3.1	2.5	0.9
Effective interest rate (percent) 4/	3.3	3.8	3.9	3.8	3.6	3.5	3.3	2.5	2.0	0.6	1.5	3.5	2.1
Growth of exports of G&S (US dollar terms, in percent)	-3.2	21.6	4.1	6.0	4.8	2.1	2.2	1.7	1.3	1.3	1.3	7.2	2.2
Growth of imports of G&S (US dollar terms, in percent)	-18.6	34.4	6.4	20.6	6.9	4.5	11.6	2.6	2.6	1.6	1.7	3.7	5.2
Grant element of new public sector borrowing (in percent)	...	...	...	21.6	19.6	31.1	46.7	45.3	46.0	27.2	33.7	...	38.0
Government revenues (excluding grants, in percent of GDP)	13.9	13.9	15.5	14.3	14.1	13.9	14.0	14.1	14.1	15.4	16.9	11.8	14.4
Aid flows (in Million of US dollars) 5/	987.8	861.0	1051.7	515.3	670.9	828.4	667.5	722.6	743.5	514.0	700.7		
Grant-equivalent financing (in percent of GDP) 6/	...	...	...	1.6	2.4	2.2	2.1	2.2	2.1	1.1	0.8	...	1.7
Grant-equivalent financing (in percent of external financing) 6/	...	...	...	46.2	29.5	45.2	62.7	59.2	60.5	53.7	49.7	...	58.1
Nominal GDP (Million of US dollars)	20,759	22,743	24,141	25,230	25,269	25,462	25,727	26,667	27,815	37,043	68,068		
Nominal dollar GDP growth	-4.4	9.6	6.1	4.5	0.2	0.8	1.0	3.7	4.3	6.0	6.4	8.1	4.0
Memorandum items:													
PV of external debt 7/	...	...	70.9	59.2	54.2	49.9	55.9	56.1	64.2	53.8	17.0		
In percent of exports	...	...	164.0	135.2	118.2	107.4	118.9	121.5	143.4	150.1	76.6		
Total external debt service-to-exports ratio	49.4	29.6	25.9	25.6	21.2	18.9	16.5	19.3	20.1	25.4	13.1		
PV of PPG external debt (in Million of US dollars)			3548.2	3952.6	4812.4	5177.4	5348.5	5463.8	5535.7	4743.6	6306.1		
(PVt-PVt-1)/GDPt-1 (in percent)				1.7	3.4	1.4	0.7	0.4	0.3	0.4	0.3		
Non-interest current account deficit that stabilizes debt ratio	-25.2	-15.5	-27.1	-15.5	-23.3	-23.5	-31.8	-24.5	-31.4	-3.6	-4.6		

Definition of external/domestic debt	Residency-based
Is there a material difference between the two criteria?	No





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) + Ɛα (1+r)]/(1+g+ρ+gρ) times previous period debt ratio, with r = nominal interest rate; g = real GDP growth rate, ρ = growth rate of GDP deflator in U.S. dollar terms, Ɛ=nominal appreciation of the local currency, and α= share of local currency-denominated external debt in total external debt.

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

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

6/ 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).

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

8/ Historical averages are generally derived over the past 10 years, subject to data availability, whereas projections averages are over the first year of projection and the next 10 years.

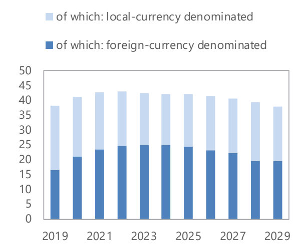
Table 2. Papua New Guinea: Public Sector Debt Sustainability Framework, Baseline Scenario, 2016-2039

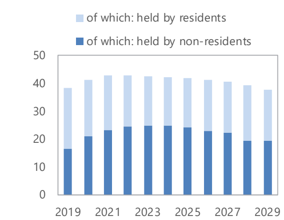
(In percent of GDP unless otherwise indicated)

	Actual			Projections								Average 6/	
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2029	2039	Historical	Projections
Public sector debt 1/	**33.7**	**32.5**	**36.8**	**38.3**	**41.2**	**42.8**	**43.0**	**42.5**	**42.2**	**37.9**	**30.3**	**22.5**	**41.0**
of which: external debt	**8.5**	**8.8**	**15.2**	**16.5**	**21.1**	**23.3**	**24.6**	**24.9**	**25.0**	**19.4**	**17.9**	**7.8**	**22.2**
				21.8	20.1	19.5	18.4	17.6	17.2	18.5	12.4		
Change in public sector debt	3.8	-1.3	4.3	1.5	2.9	1.6	0.2	-0.5	-0.3	-1.4	2.2		
Identified debt-creating flows	**2.9**	**-0.9**	**0.1**	**1.2**	**2.2**	**0.8**	**-0.7**	**-0.7**	**-0.5**	**-1.6**	**2.3**	**1.2**	**-0.3**
Primary deficit	**2.8**	**0.4**	**0.2**	**1.7**	**2.8**	**1.6**	**0.1**	**-0.2**	**-0.2**	**-1.8**	**2.1**	**1.7**	**0.0**
Revenue and grants	16.1	15.9	17.8	15.4	15.1	14.9	15.0	15.0	15.0	16.2	17.4	**13.1**	**15.3**
of which: grants	2.2	2.0	2.3	1.1	1.0	1.0	1.0	0.9	0.9	0.8	0.4		
Primary (noninterest) expenditure	18.9	16.3	18.0	17.1	17.8	16.5	15.1	14.8	14.8	14.5	19.4	**14.8**	**15.3**
Automatic debt dynamics	**0.1**	**-1.3**	**-0.2**	**-1.2**	**-0.6**	**-0.8**	**-0.9**	**-0.5**	**-0.3**	**0.2**	**0.3**		
Contribution from interest rate/growth differential	-0.1	-1.0	0.2	-1.2	-0.6	-0.8	-0.9	-0.5	-0.3	0.2	0.3		
of which: contribution from average real interest rate	1.1	0.2	-0.1	0.5	0.2	0.3	0.3	0.8	1.0	1.3	1.2		
of which: contribution from real GDP growth	-1.2	-1.2	0.3	-1.8	-0.7	-1.1	-1.2	-1.3	-1.4	-1.1	-0.9		
Contribution from real exchange rate depreciation	0.2	-0.3	-0.3	...	...	...	...	...	...	...	...		
Other identified debt-creating flows	**0.0**	**0.0**	**0.0**	**0.7**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.1**
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 contingent liabilities (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		
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 debt creating or reducing flow (please specify)	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Residual	**0.9**	**-0.4**	**4.2**	**0.3**	**0.7**	**0.9**	**0.9**	**0.2**	**0.2**	**0.2**	**-0.1**	**1.6**	**0.4**
Sustainability indicators													
PV of public debt-to-GDP ratio 2/	**...**	**...**	**36.7**	**37.8**	**39.6**	**40.3**	**39.7**	**38.4**	**37.3**	**32.9**	**25.3**		
PV of public debt-to-revenue and grants ratio	**...**	**...**	**206.2**	**246.1**	**262.6**	**270.1**	**265.1**	**255.8**	**249.2**	**202.9**	**146.0**		
Debt service-to-revenue and grants ratio 3/	**127.5**	**120.1**	**103.8**	**90.4**	**114.7**	**110.9**	**114.3**	**122.6**	**123.2**	**74.8**	**24.7**		
Gross financing need 4/	23.4	19.5	18.7	16.3	20.1	18.1	17.2	18.2	18.2	10.4	6.3		
Key macroeconomic and fiscal assumptions													
Real GDP growth (in percent)	4.1	3.5	-0.8	5.0	2.0	2.8	2.9	3.2	3.3	2.9	3.2	**5.6**	**3.1**
Average nominal interest rate on external debt (in percent)	2.9	2.8	3.2	3.8	3.0	3.2	3.2	3.1	3.0	2.2	3.1	**2.0**	**3.0**
Average real interest rate on domestic debt (in percent)	4.3	0.5	-1.0	1.4	0.0	0.4	0.3	3.1	4.7	6.5	6.3	**3.8**	**3.6**
Real exchange rate depreciation (in percent, + indicates depreciation)	2.9	-3.7	-3.6	...	...	...	...	...	...	...	...	**0.7**	**...**
Inflation rate (GDP deflator, in percent)	3.9	7.7	10.1	1.9	6.8	6.5	6.8	4.2	3.0	3.0	3.1	**4.0**	**4.0**
Growth of real primary spending (deflated by GDP deflator, in percent)	-6.7	-11.1	10.0	-0.6	6.6	-4.9	-5.8	1.4	2.9	2.9	10.6	**3.4**	**1.1**
Primary deficit that stabilizes the debt-to-GDP ratio 5/	-1.0	1.6	-4.1	0.2	-0.1	-0.1	0.0	0.3	0.1	-0.4	-0.2	**-1.1**	**-0.1**
PV of contingent liabilities (not included in public sector debt)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		

Definition of external/domestic debt	**Residency-based**
Is there a material difference between the two criteria?	**No**

Public sector debt 1/





Sources: Country authorities; and staff estimates and projections.
1/ Coverage of debt: The central, state, and local governments, government-guaranteed debt . Definition of external debt is Residency-based.
2/ The underlying PV of external debt-to-GDP ratio under the public DSA differs from the external DSA with the size of differences depending on exchange rates projections.
3/ Debt service is defined as the sum of interest and amortization of medium and long-term, and short-term debt.
4/ 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 and other debt creating/reducing flows.
5/ Defined as a primary deficit minus a change in the public debt-to-GDP ratio ((-): a primary surplus), which would stabilizes the debt ratio only in the year in question.
6/ Historical averages are generally derived over the past 10 years, subject to data availability, whereas projections averages are over the first year of projection and the next 10 years.

Table 3. Papua New Guinea: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2019-2029

(In percent)

	Projections 1/										
	2019	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**
PV of debt-to GDP ratio											
Baseline	16	19	20	21	20	20	19	17	16	13	13
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2019-2029 2/	16	33	**47**	**59**	**70**	**81**	**87**	**92**	**93**	**90**	**89**
B. Bound Tests											
B1. Real GDP growth	16	20	23	24	24	23	22	20	18	15	15
B2. Primary balance	16	19	21	22	22	21	20	19	18	15	15
B3. Exports	16	27	**42**	**44**	**43**	**43**	**41**	39	37	33	32
B4. Other flows 3/	16	21	25	26	26	25	24	22	21	18	17
B5. Depreciation	16	24	29	30	29	29	27	25	23	20	19
B6. Combination of B1-B5	16	25	30	31	31	30	29	27	26	22	21
C. Tailored Tests											
C1. Combined contingent liabilities	16	21	23	24	25	25	24	23	23	20	20
C2. Natural disaster	16	21	23	24	24	24	24	22	22	19	19
C3. Commodity price	16	25	32	34	34	35	34	33	32	29	28
C4. Market Financing	16	21	23	23	23	22	21	19	18	15	14
Threshold	40	40	40	40	40	40	40	40	40	40	40
PV of debt-to-exports ratio											
Baseline	36	42	44	44	44	44	43	42	41	35	36
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2019-2029 2/	36	71	101	126	152	**181**	**202**	**224**	**236**	**240**	**249**
B. Bound Tests											
B1. Real GDP growth	36	42	44	44	44	44	43	42	41	35	36
B2. Primary balance	36	42	46	47	47	48	47	46	46	40	41
B3. Exports	36	69	128	130	132	133	134	132	133	125	123
B4. Other flows 3/	36	47	54	55	55	56	55	54	53	48	48
B5. Depreciation	36	42	49	50	50	50	49	47	47	42	42
B6. Combination of B1-B5	36	57	60	75	75	76	75	74	73	66	66
C. Tailored Tests											
C1. Combined contingent liabilities	36	45	50	52	54	56	57	57	58	54	56
C2. Natural disaster	36	44	48	50	52	53	54	53	54	50	53
C3. Commodity price	36	67	81	81	82	82	82	82	84	80	82
C4. Market Financing	36	42	44	44	44	44	43	41	41	35	36
Threshold	180	180	180	180	180	180	180	180	180	180	180
Debt service-to-exports ratio											
Baseline	2	7	5	3	4	5	5	5	3	8	4
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2019-2029 2/	2	6	5	4	6	7	7	8	7	13	11
B. Bound Tests											
B1. Real GDP growth	2	7	5	3	4	5	5	5	3	8	4
B2. Primary balance	2	7	5	4	5	5	5	5	4	9	4
B3. Exports	2	9	8	7	9	9	9	9	7	**16**	12
B4. Other flows 3/	2	7	5	4	5	5	5	5	4	9	5
B5. Depreciation	2	7	5	4	5	5	5	5	4	8	4
B6. Combination of B1-B5	2	8	6	5	6	6	6	6	5	12	6
C. Tailored Tests											
C1. Combined contingent liabilities	2	7	5	4	5	5	5	5	4	9	4
C2. Natural disaster	2	7	5	4	5	5	5	5	4	9	4
C3. Commodity price	2	9	6	5	6	6	6	6	5	11	7
C4. Market Financing	2	7	5	3	4	5	5	5	3	8	4
Threshold	15	15	15	15	15	15	15	15	15	15	15
Debt service-to-revenue ratio											
Baseline	7	**23**	16	11	15	15	14	13	9	**21**	8
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2019-2029 2/	7	**21**	17	15	**19**	**21**	**22**	**22**	**19**	**31**	**26**
B. Bound Tests											
B1. Real GDP growth	7	**24**	**18**	13	17	17	16	15	10	**24**	9
B2. Primary balance	7	**23**	16	12	15	15	14	14	9	**21**	9
B3. Exports	7	**24**	**19**	17	**20**	**20**	**19**	**18**	13	**29**	**19**
B4. Other flows 3/	7	**23**	16	12	16	16	15	14	10	**22**	11
B5. Depreciation	7	**29**	**20**	15	**19**	**19**	**18**	17	12	**27**	12
B6. Combination of B1-B5	7	**24**	**18**	14	18	18	17	16	11	**26**	13
C. Tailored Tests											
C1. Combined contingent liabilities	7	**23**	16	12	15	16	15	14	10	**22**	9
C2. Natural disaster	7	**23**	16	12	15	15	15	14	10	**21**	9
C3. Commodity price	7	**24**	**19**	15	**18**	**19**	17	16	12	**26**	15
C4. Market Financing	7	**23**	16	12	15	15	14	13	9	**21**	8
Threshold	18	18	18	18	18	18	18	18	18	18	18

Sources: Country authorities; and staff estimates and projections.

1/ A bold value indicates a breach of the threshold.

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

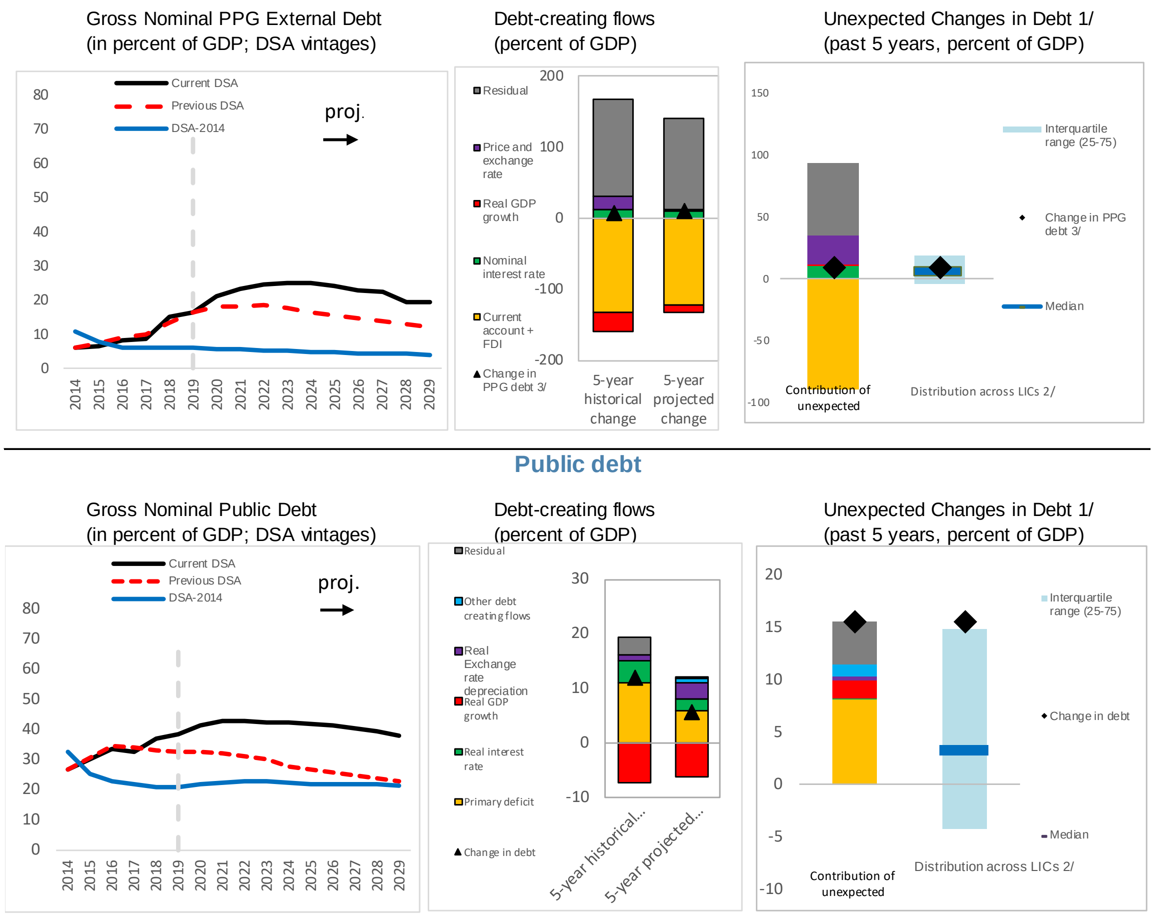
3/ Includes official and private transfers and FDI.

Table 4. Papua New Guinea: Sensitivity Analysis for Key Indicators of Public Debt, 2019-2029
(In percent)

	Projections 1/										
	2019	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**
PV of Debt-to-GDP Ratio											
Baseline	38	40	40	40	38	37	37	36	36	34	33
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2019-2029 2/	38	39	39	40	39	38	37	37	37	36	36
B. Bound Tests											
B1. Real GDP growth	38	43	49	50	51	51	53	54	55	**55**	**56**
B2. Primary balance	38	42	45	44	43	42	41	41	40	38	37
B3. Exports	38	46	**58**	**58**	**57**	**56**	**55**	55	54	52	50
B4. Other flows 3/	38	42	45	45	44	42	42	42	41	39	38
B5. Depreciation	38	40	40	39	36	35	33	32	31	28	27
B6. Combination of B1-B5	38	40	42	42	41	40	40	40	40	39	38
C. Tailored Tests											
C1. Combined contingent liabilities	38	**56**	**56**	**55**	54	53	52	51	50	49	48
C2. Natural disaster	38	51	52	52	51	50	50	50	50	49	48
C3. Commodity price	38	42	45	48	50	51	53	54	**55**	**56**	**56**
C4. Market Financing	38	40	40	40	38	37	37	36	36	34	33
TOTAL public debt benchmark	55	55	55	55	55	55	55	55	55	55	55
PV of Debt-to-Revenue Ratio											
Baseline	246	263	270	265	256	249	246	237	227	215	203
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2019-2029 2/	246	256	263	264	258	253	249	243	237	229	223
B. Bound Tests											
B1. Real GDP growth	246	286	326	333	335	340	348	349	349	345	342
B2. Primary balance	246	276	300	295	285	278	274	265	254	241	229
B3. Exports	246	304	390	388	378	371	368	358	346	329	309
B4. Other flows 3/	246	279	304	300	290	284	280	271	261	247	232
B5. Depreciation	246	268	270	260	244	231	223	210	197	179	164
B6. Combination of B1-B5	246	263	282	280	273	269	268	262	254	243	233
C. Tailored Tests											
C1. Combined contingent liabilities	246	370	376	370	359	351	346	335	322	307	293
C2. Natural disaster	246	339	350	347	340	336	335	327	318	307	296
C3. Commodity price	246	294	322	341	345	350	356	352	351	348	345
C4. Market Financing	246	263	270	265	256	249	246	237	227	215	203
Debt Service-to-Revenue Ratio											
Baseline	90	115	111	114	123	123	120	101	86	85	75
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2019-2029 2/	90	114	110	113	119	116	109	89	74	70	60
B. Bound Tests											
B1. Real GDP growth	90	122	131	143	160	168	171	154	143	146	139
B2. Primary balance	90	115	122	133	139	139	135	114	98	96	86
B3. Exports	90	115	112	117	126	126	123	104	89	90	83
B4. Other flows 3/	90	115	111	115	124	124	121	102	87	87	77
B5. Depreciation	90	109	107	109	117	118	115	97	82	86	72
B6. Combination of B1-B5	90	113	113	118	128	130	128	110	96	96	86
C. Tailored Tests											
C1. Combined contingent liabilities	90	115	193	175	184	180	171	147	129	124	110
C2. Natural disaster	90	119	166	159	170	170	165	144	128	125	114
C3. Commodity price	90	124	122	128	149	155	157	139	128	132	127
C4. Market Financing	90	115	111	114	123	123	121	101	86	85	75

Sources: Country authorities; and staff estimates and projections.
1/ A bold value indicates a breach of the benchmark.
2/ Variables include real GDP growth, GDP deflator and primary deficit in percent of GDP.
3/ Includes official and private transfers and FDI.

Figure 3. Papua New Guinea: Drivers of Debt Dynamics – Baseline Scenario External Debt



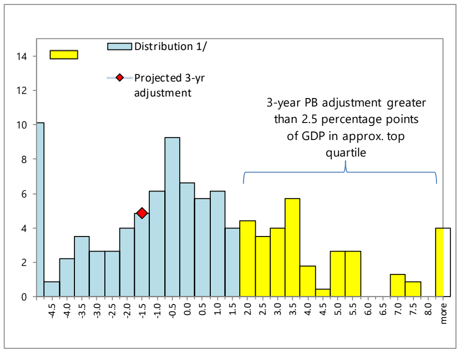
1/ Difference between anticipated and actual contributions on debt ratios.

2/ Distribution across LICs for which LIC DSAs were produced.

3/ Given the relatively low private external debt for average low-income countries, a ppt change in PPG external debt should be largely explained by the drivers of the external debt dynamics equation.

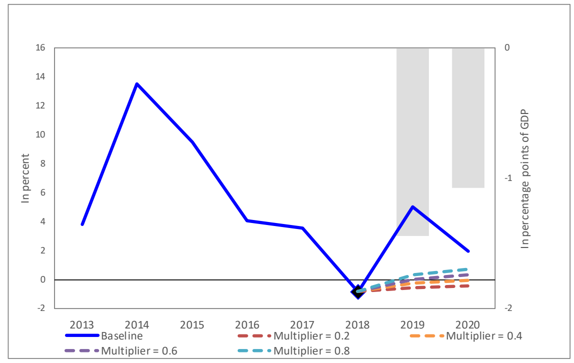
Figure 4. Papua New Guinea: Realism Tools

3-Year Adjustment in Primary Balance
(Percentage points of GDP)



1/ Data cover Fund-supported programs for LICs (excluding emergency financing) approved since 1990. The size of 3-year adjustment from program inception is found on the horizontal axis; the percent of sample is found on the vertical axis.

Fiscal Adjustment and Possible Growth Paths 1/



1/ Bars refer to annual projected fiscal adjustment (right-hand side scale) and lines show possible real GDP growth paths under different fiscal multipliers (left-hand side scale).

Public and Private Investment Rates
(percent of GDP)

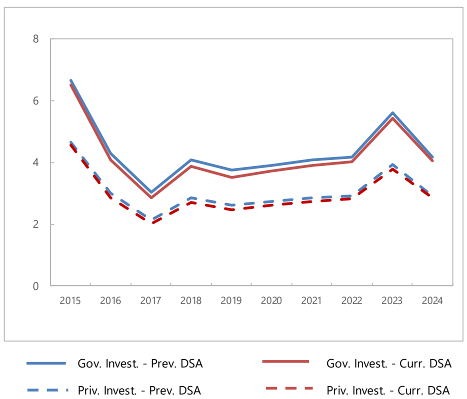
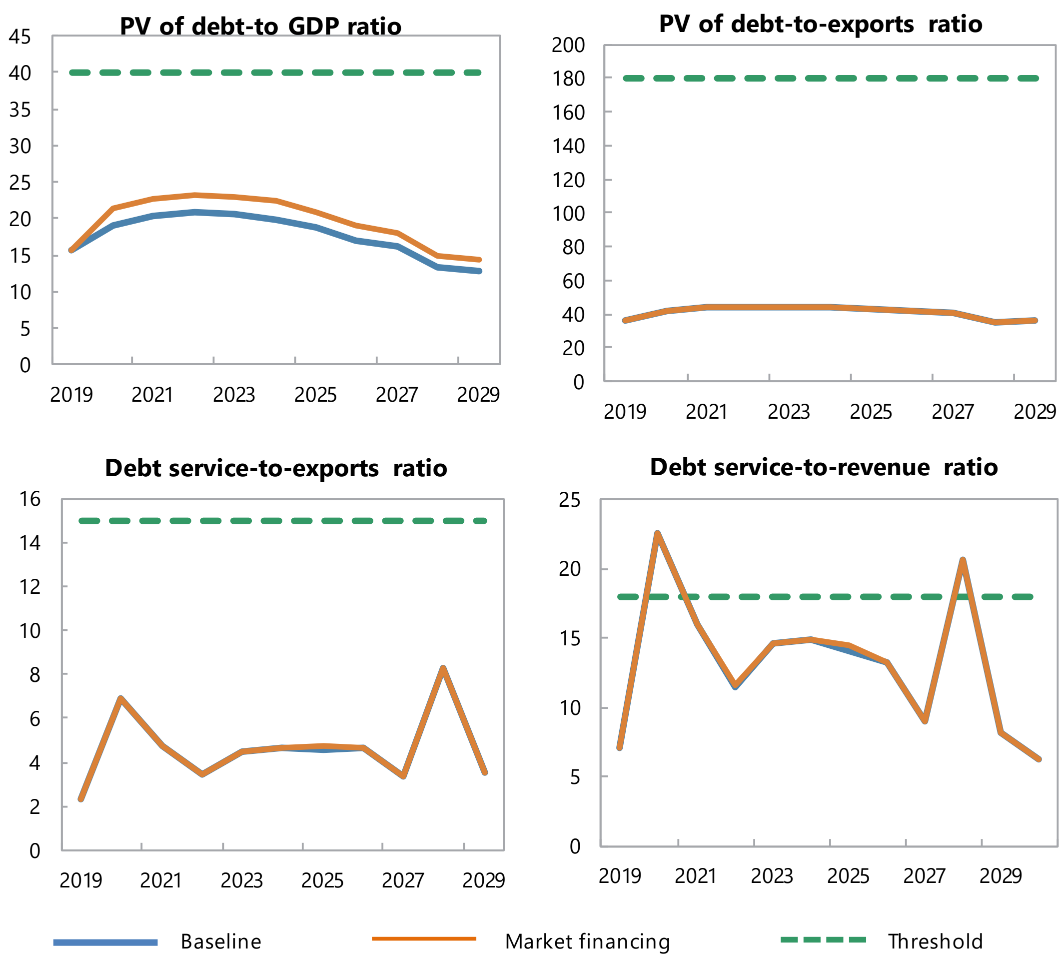


Figure 5. Papua New Guinea: Market-Financing Risk Indicators

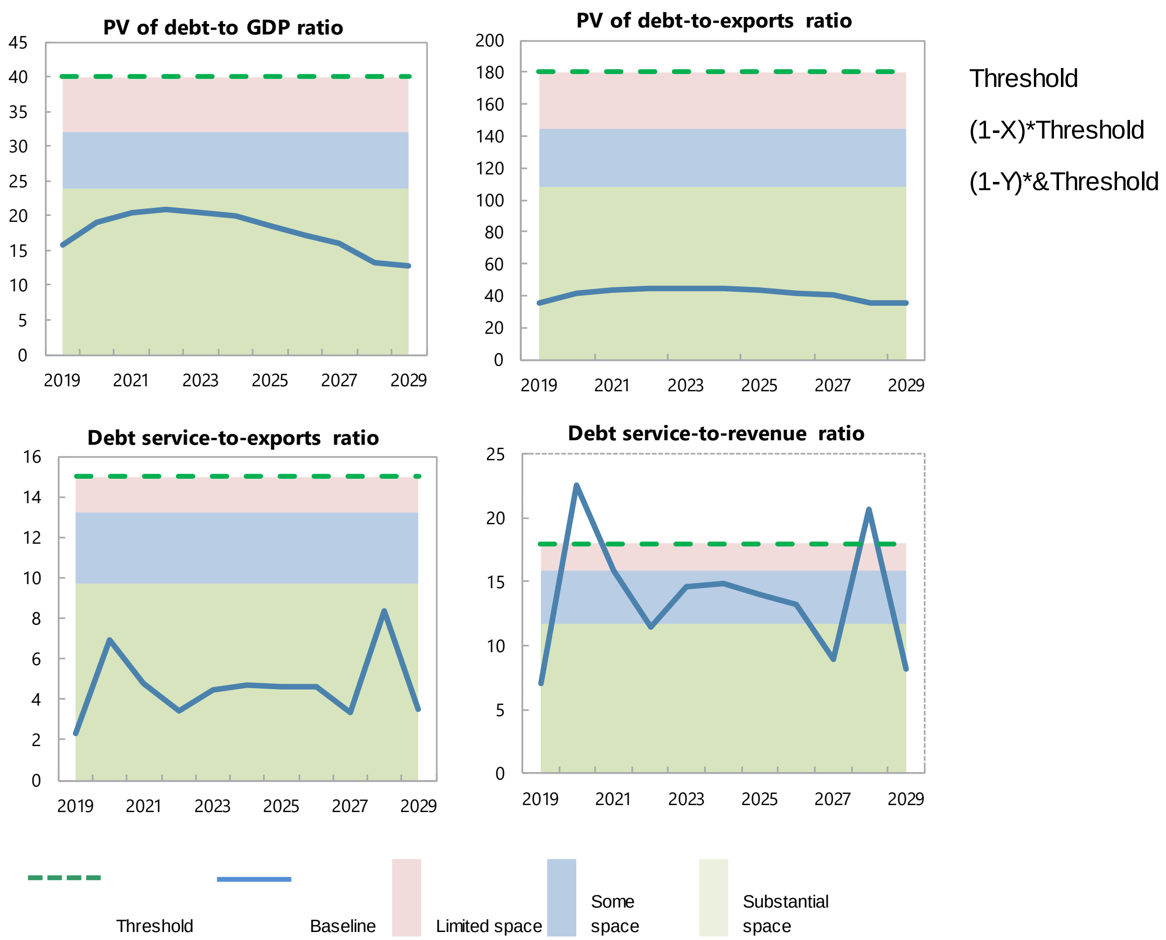
	GFN 1/	EMBI 2/
Benchmarks	14	570
Values	20	585
Breach of benchmark	Yes	Yes
Potential heightened liquidity needs	High	

1/ Maximum gross financing needs (GFN) over 3-year baseline projection horizon.
2/ EMBI spreads correspond to the latest available data.



Sources: Country authorities; and staff estimates and projections.

Figure 6. Papua New Guinea: Qualification of the Moderate Category, 2019-2029 1/



Sources: Country authorities; and staff estimates and projections.

1/ For the PV debt/GDP and PV debt/exports thresholds, x is 20 percent and y is 40 percent. For debt service/Exports and debt service/revenue thresholds, x is 12 percent and y is 35 percent.