

FINANCIAL ANALYSIS

A. Introduction

1. Nuku'alofa Port is the main international port of Tonga and serves the main island of Tongatapu, home to 74% of the country's population. The port's Queen Salote International Wharf (QSIW) has two docks—dock no. 1, with a length of 90 meters (m), was built after the Second World War and upgraded in 1996, while dock no. 2 is 110 m long and was built in the 1980s. Dock no. 1 is no longer operational because it is deemed unsafe. The water depth alongside the docks is 12 m, which would allow vessel sizes of 190 m–230 m. However, the docks' length is insufficient to allow vessels of more than 180 m to berth, which requires more vessel calls to transport the desired goods and increases freight-related costs. The proposed project will upgrade the QSIW and the associated infrastructure to increase operational capacity both portside and in the container yard.

2. Ports Authority Tonga (PAT), a government entity and the current operator of the QSIW, will be involved into the project's implementation only as a technical advisor to the project team. However, after project completion, PAT will be solely responsible for the operation and maintenance (O&M) of Nuku'alofa Port, including the assets provided by the project. The Asian Development Bank (ADB) carried out a financial analysis of the proposed project as well as an overall financial assessment of PAT in accordance with ADB's Financial Management and Analysis of Projects (2005), and its Financial Analysis and Evaluation: Technical Guidance Note (2019).

B. Financial Evaluation

3. The financial evaluation compares the project income and expenditures. Incremental benefits and costs were computed on the basis of with-project and without-project scenarios. All financial benefits and costs are expressed in real terms in 2020 prices. Taxes and duties are included but price contingencies and interest during construction are excluded. The analysis was carried out on an incremental basis using the discounted cash flow method and calculating the financial internal rate of return (FIRR) of the project, with the following considerations:

- (i) Capital costs are based on the estimated project costs from the project feasibility study. They cover the rehabilitation and extension of the docks, the rehabilitation and upgrade of the yard, and smart port components to improve operational efficiency and safety. They also include physical contingencies, safeguards, and project management costs.
- (ii) O&M costs include labor, energy use, maintenance and repair, and administrative and miscellaneous costs for operating and maintaining the port. The operational cost were estimated based on historical trends. The maintenance and repair costs without and with the project were estimated based on an assessment of the needs over the analysis period. Without the project, the repair and maintenance costs would increase over the forecast years.
- (iii) No tariff increase was considered during the analysis period.
- (iv) The revenue and cost streams are compared for a 2-year construction period and 20-year operation period. In the last year, the residual value of the terminal was included according to the economic life by applying the straight-line depreciation method.

4. The financial evaluation of the project indicates that the net incremental benefits are positive with a first-year FIRR of 1.43%. However, over the analysis period, considering 20 years

of operation, the estimated FIRR for the project is –1.4%, indicating that the project is not financially viable. The project, however, is an essential public infrastructure investment, and the primary consideration is its economic viability and financial sustainability. A financial sustainability analysis was undertaken.

C. Financial Sustainability Analysis

5. Since PAT, upon project completion, will be responsible for the maintenance of the ports and its assets, the historic financial performance of PAT was analyzed based on its audited financial statements from fiscal year (FY) 2014 (ended 30 June 2014) to FY2019. In the 6-year period, PAT enjoyed robust growth. Revenue growth was strong, in line with the growth in trade volume, averaging 10.6% annually, from \$3.4 million in FY2014 to \$5.6 million in FY2019. The net profit margin rose from 14.6% in FY2014 to 24.7% in FY2019. The financial performance of PAT (Table 1) suggests that the entity is financially sound, with healthy leverage.

Table 1: Port Authority of Tonga – Financial Performance, FY2014–FY2019
(\$'000, unless otherwise indicated)

Item	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019
Total revenue	3.41	3.81	4.30	5.62	5.15	5.64
Total expenditure	1.93	2.03	2.35	2.77	2.49	2.93
EBITDA	1.48	1.78	1.95	2.86	2.66	2.71
Net profit/(loss)	0.50	0.83	0.91	1.49	1.34	1.39
Current assets	1.97	1.84	1.60	2.18	3.11	2.49
Non-current assets	7.60	8.12	8.68	9.07	8.50	10.41
Current liabilities	0.84	1.03	1.14	1.91	1.88	2.24
Non-current liabilities	1.58	1.36	1.13	0.83	0.54	0.78
Equity and reserves	7.14	7.56	8.01	8.52	9.19	9.89
Total liabilities and equities	9.57	9.96	10.28	11.26	11.61	12.91
Net change in cash & equivalents	0.37	(0.15)	0.03	0.14	0.82	(0.60)
Dividends paid	0.41	0.25	0.42	0.68	0.38	0.67
Net profit margin (%)	14.6	21.7	21.0	26.5	26.0	24.7
Return on equity (%)	7.0	11.3	11.6	18.0	15.1	14.6
Return on assets (%)	5.2	8.5	9.0	13.9	11.7	11.3
Current ratio	2.33	1.78	1.40	1.14	1.66	1.11

() = negative; EBITDA = earnings before interest, taxes, depreciation, and amortization; FY = fiscal year.

Source: Ports Authority Tonga.

6. The financial projections of PAT's operations with the project (Table 2) were made based on projected demand and operational needs over a 20-year period to assess whether PAT will be able to allocate sufficient funds for the annual maintenance and periodical repairs. PAT is expected to see revenue growing at a modest compound annual growth rate (CAGR) of 1.6% between 2019 and 2043, compared with containerized volume growth of CAGR 1.9% in the same period. This projection takes into account the impact of the coronavirus disease (COVID-19) on the expected growth, which was revised down from a long-term growth rate of 2.6% (expected based on the trend before COVID-19) to 1.9% based on the revised forecast. The projections indicate that earnings before interest, taxes, depreciation, and amortization (EBITDA) increase modestly from \$2.4 million in 2020 to \$3.2 million in 2040, with sufficient funds allocated for all maintenance and repair works. The net profit decreases from \$1.2 million in 2020 to \$0.8 million in 2040, with some years of negative net profit. The negative net profit is a result of much higher depreciation arising from an almost sixfold increase in the fixed asset base with the project. An analysis of free cash flow indicates that PAT will have a cumulative free cash flow of \$27.7 million

between 2020 and 2040. Further, an analysis of net operating cash flow before maintenance and repairs indicates a coverage ratio of more than 3 for the maintenance and repair needs throughout the analysis period.

Table 2: Financial Projections of Ports Authority Tonga
(\$'000)

Item	2020	2021	2022	2023	2024	2025	2030	2035	2040
Wharfage	1.96	1.99	2.03	2.07	2.11	2.15	2.34	2.55	2.79
Berthage	1.16	1.16	1.20	1.21	1.24	1.25	1.54	1.75	1.94
Handling	1.08	1.10	1.12	1.14	1.16	1.19	1.31	1.44	1.60
Others	0.60	0.61	0.63	0.64	0.65	0.66	0.75	0.80	0.88
Operating income	4.80	4.87	4.98	5.05	5.16	5.24	5.93	6.55	7.21
Repairs & maintenance	0.12	0.13	0.15	0.16	0.30	0.34	0.89	0.84	0.81
Others	2.32	2.36	2.42	2.45	2.51	2.55	2.89	3.21	3.56
Cash expenses	2.45	2.49	2.56	2.61	2.81	2.89	3.78	4.05	4.36
Net operating income	2.35	2.37	2.42	2.44	2.35	2.35	2.14	2.50	2.85
Finance expenses	0.17	0.22	0.30	0.40	0.57	0.64	0.25	0.02	0.01
Tax expenses	0.40	0.38	0.37	0.35	0.00	0.00	0.02	0.15	0.24
Net operating cash	1.78	1.77	1.74	1.69	1.78	1.71	1.87	2.32	2.60
Operating ratio	0.51	0.51	0.51	0.52	0.54	0.55	0.64	0.62	0.61

Source: Asian Development Bank estimates.

C. Project Sustainability—Asset Maintenance Plan

7. The financial analysis of PAT shows that port O&M is financially sustainable because the port generates sufficient cash flow to cover these needs. However, a review of the current O&M practice suggests that PAT has insufficient technical capacity to undertake maintenance, that financial mechanisms do not exist, and that the current budget allocations for maintenance are insufficient to ensure the availability of funds to cover the real maintenance costs.

8. To ensure that the port and project assets are adequately maintained and enhance the sustainability of the project, the government will periodically update and implement an asset management plan (AMP) that sets out the technical and financial requirements of maintenance (para. 9) and calls for the creation of a dedicated maintenance team within PAT. The preparation of the AMP was initiated under the feasibility study funded by ADB's technical assistance, and the AMP will be updated and executed during the project's implementation with the support of the detailed design consultant and the construction supervision consultant.

1. Technical Requirements

9. The AMP states that the current maintenance standards and practices of PAT are inadequate for the future needs of the port. Under the AMP, the following activities will be undertaken during project implementation:

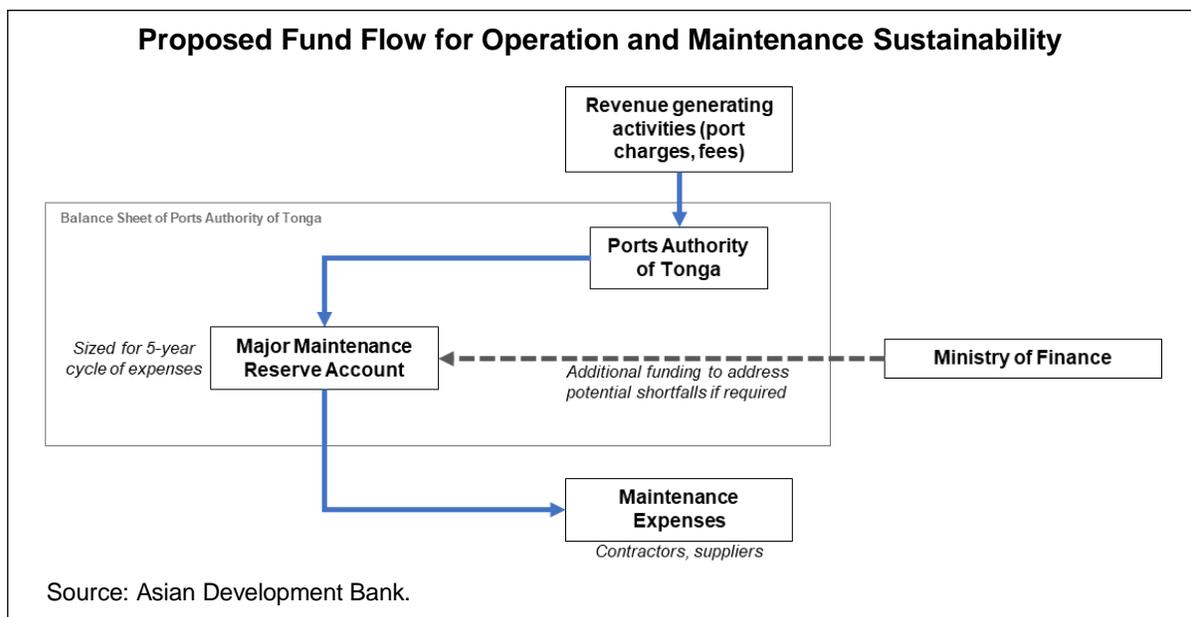
- (i) By December 2021, the construction supervision consultant will submit the revised tariff regime and present reform options.
- (ii) By December 2021, the construction supervision consultant will develop an asset management manual that provides (i) a registry and asset taxonomy of the different assets of PAT, (ii) maintenance guidelines and instructions for PAT to carry out basic investigations and maintenance, and (iii) instructions for contracting major maintenance.

- (iii) By December 2021, the construction supervision consultant will recommend different contracting modalities for the procurement of services to undertake different maintenance activities.
- (iv) By December 2022, PAT will establish an Asset Management Unit with at least two full-time staff.
- (v) By December 2024, the construction supervision consultant will provide training in asset maintenance and management to the staff in the Asset Management Unit.

10. During the first years after project completion, the required maintenance activities will be minimal. The Asset Management Unit will be mainly involved in undertaking basic investigation and maintenance activities to monitor and assess the condition of the assets. Major investigation and maintenance activities will require the contracting of specialized contractors with experience and adequate equipment to perform these activities. The specialized contractors are expected to be international, so the proper and efficient procurement of these services is essential. The asset management manual will provide guidance and instructions, and under the AMP, staff will be trained to perform these activities.

2. Financial Requirements

11. Given the intrinsic characteristics of the maintenance activities, maintenance expenses need to be computed in 5-year cycles, as major maintenance activities are not performed yearly but in 5-year cycles on average. The required maintenance amount for a 5-year cycle is about \$1.5 million. To ensure the availability of these funds, PAT will establish by December 2022 a Major Maintenance Reserve Account (MMRA), a segregated reserve fund for O&M in the balance sheet of PAT, to which annual allocations shall be made by PAT. The primary source of funding of the MMRA will be the revenue activities (port services) delivered and charged by PAT. As shown in the figure below, based on past and anticipated revenue generation, PAT generates enough cash flow to fund the MMRA. The Ministry of Finance will provide additional funding to cover potential shortfalls, if required. By December 2024, the MMRA will have reached at least 75% of its required size to cover the first 5-year cycle of maintenance expenses. The remainder will be funded by the revenues generated until incurring these expenses.



3. Reporting Requirements

12. For the preparation, development, and implementation of the AMP, the following reporting requirements apply:

- (i) ADB's technical assistance consultant will initiate the preparation of the AMP and report to ADB in consultation with the executing and implementing agencies and PAT.
- (ii) The detailed design consultant and the construction supervision consultant will finalize and support the implementation of the AMP, reporting to the executing and implementing agencies in consultation with PAT and ADB.
- (iii) PAT will create the MMRA and implement the financial and technical recommendations of the AMP.
- (iv) The executing and implementing agencies will cause PAT to fulfill their respective financial and technical responsibilities in securing financing for the AMP and improving capacity and systems for the effective implementation of the AMP.
- (v) ADB will ascertain that the provisions of the grant agreement are complied with, together with the activities described in the project administration manual.

4. Transfer of Assets

13. Upon completion of the project, the executing agency will transfer the responsibility for the O&M of Nuku'alofa Port, including the assets provided by the project, to PAT. This transfer will include an agreement that will stipulate that PAT will need to continue the implementation of the AMP. At the midterm review of the project, the executing and implementing agencies, PAT, and ADB will discuss and agree on the conditions of this transfer agreement, such as the size of the MMRA and other financial ratios to ensure the financial sustainability of PAT, including mandatory liquidity ratios (e.g., current ratio).