FINANCIAL ANALYSIS

1. The financial analysis to determine project viability and sustainability was based on (i) a comparison of the financial internal rate of return (FIRR) for the income-generating components of the project with the weighted average cost of capital (WACC); (ii) financial projections to establish future incomes, expenditures, and cash flow that indicate the financial position of the income-generating aspects of the project; and (iii) a comparison of the scale of the project with the budget of the Ho Chi Minh City people's committee (HCMC PC), which indicated the incremental demand of the project.

A. Financial Analysis

2. **Assumptions.** The FIRR was estimated for 2014–2048, comprising 5 years of project implementation and 30 years of operation. The estimate took into account project costs, which comprised the capital investment and the cost of operating the service and carrying out routine preventive maintenance (O&M). For FIRR analysis, the initial investment cost is the base cost plus physical contingencies. In addition to the initial investment cost, the analysis also considered the investment required to renew or replace exhausted or expired assets during the 30-year operational period.

3. **Patronage charges and revenues.** The project is expected to attract an additional 12,900 passenger trips per day in 2018 to Mass Rapid Transit (MRT) Line 2. This figure is expected to rise to almost 41,300 trips per day in 2038. A MRT fare of $0.32 per trip in 2010 prices has been adopted, and this fare is to remain constant in real terms through the analysis period.[1] This fare was estimated to be $0.34 in end-of-March 2013 prices, which compared with the current average bus fare of about $0.22 per trip. Estimated incremental revenue from MRT Line 2 fares was estimated to be $1.54 million in 2018 and $4.94 million in 2038. Additional revenue from advertising and concessions under the project should result from a rise in use of the MRT system, and this revenue was set at 5% of fare revenue.

4. **Weighted average cost of capital.** The WACC for the project was calculated in line with the Asian Development Bank (ADB) guidelines at only –0.76% (Table 1). The interest rate for the ADB loan is only marginally higher than expected inflation, while the interest rate for the loan from ADB's Clean Technology Fund is considerably less than the expected rate of inflation. The cost of Government of Viet Nam borrowing has been declining, with the annual interest on a 10-year bond at about 9.30% at the end of March 2013. Corporate taxes were excluded from the analysis because they will be marginal.

Table 1: Weighted Average Cost of Capital

	ADB Loan	ADB CTF Loan	Government	Total
Source of project finance ($ million)	10.0	49.0	6.0	65.0
Share of project finance (%)	15.4	75.4	9.2	100.0
Nominal cost of capital (%)	2.0	0.27	9.30	
Tax rate (%)	0.0	0.0	0.0	

[1] ADB, 2012. *L2956: Ho Chi Minh City Urban Mass Rapid Transit Line 2 Investment Program – Tranche 2*. Manila (Due Diligence Review).

Tax-adjusted nominal cost (%)	2.00	0.27	9.30	
Long-term inflation rate (%)	1.80	1.80	5.10	
Real cost of capital (%)	0.17	(1.53)	4.02	(0.76)

() = negative, ADB = Asian Development Bank, CTF = Clean Technology Fund
Source: Asian Development Bank estimates.

5. **Financial internal rate of return.** The FIRR was calculated to be 2.2%, which is more than the WACC 0.4%. The project's infrastructure investment is therefore financially viable and will result in the HCMC PC having income over the life of the project that will exceed its costs. The project's financial net present value, using a discount rate equal to the WACC, is $46.1 million. Sensitivity tests showed that the project FIRR will continue to exceed the WACC if capital and ongoing operating and maintenance costs do not rise by more than 41% or if revenue does not fall more than 29% below that estimated. The results of sensitivity tests are in Table 2.

Table 2: Financial Evaluation and Sensitivity Test Results

Scenarios	Change	FNPV ($ million)	FIRR (%)
Base case estimate		46.1	2.2
1. Capital costs rise 10%		42.1	1.8
2. Operating & maintenance costs rise 10%		38.8	1.8
3. Capital and O&M costs rise 10%		34.8	1.4
4. Revenue declines 20%		14.3	0.3
5. Combination of 3 and 4		34.8	1.4
6. Project completion is delayed 1 year		43.3	2.0
7. Switching value (costs)	41%	0.0	(0.4)
8. Switching value (revenue)	(29%)	0.0	0.4

() = negative, FIRR = Financial internal rate of return, FNPV = Financial net present value

B. Financial Projections

6. **Assumptions.** The financial performance of the income-generating aspects of the project was projected for the period of implementation and the term of the ADB loan to demonstrate the incremental effect it will have on the finances of the HCMC PC. As the income and expenditures accrue to different entities of the HCMC PC, the analysis indicates the effect on the people's committee as a whole. [2] A partial analysis that shows income and cash flow statements was prepared. The analysis was undertaken in domestic currently units expressed in nominal prices. It is based on an average depreciation period of 35 years for the assets involved, a 5-year grace period and 25-year overall term for the ADB loan, with an interest rate

[2] For example, MRT rail costs and changes in fare and advertising revenue will accrue to the Management Authority of Urban Railways. The Management and Operations Center for Public Transport will face changes in bus-related costs and revenues, and district people's committees will incur additional maintenance costs for some local infrastructure.

of 2% per annum; and a 10-year grace period and 40-year overall term for the CTF loan, with an interest rate of 0.25% per annum and commitment fee of 0.18% per annum. Forecast inflation was used for determining the price escalation component of the project cost and a 24% tax rate on profits.

7. **Projected financial statements.** The financial projections showed (i) positive operating income in every year other than the first year of operation, (ii) pre-tax losses occurring until 2024, (iii) no cumulative taxable income until after 2024, and (iv) negative net income until 2022. Positive cash flow will be sufficient to meet debt service during the grace period and, given accumulation of funds, until 2031. While a negative cash balance of $6.1 million was reached in 2037, ongoing net cash flow was forecast to result in a surplus being restored by 2044. The debt service coverage ratio was equal to or greater than 1 for most years of the project life, although it fell below 1 in some of the intermediate years in line with the declining cash balance.

C. Affordability of the Project to Government

8. Total investment expenditures in all sectors by the HCMC PC, including maintenance, were estimated at $1.3 billion in 2012. During 2010–2012, development investment expenditure was about 70% of total expenditure. Transport accounted for 14% of the apparent recurrent components of the expenditure, or about $110 million in 2012. Spending on maintenance of road and transport infrastructure was about $65 million in 2010 and about $110 million in 2011. Expenditure on public transport—the city's bus services—was around $95 million in 2011.

9. The total project cost of $65.0 million is to be expended over a 4-year period—i.e., with average annual expenditure of $16.3 million per annum. This is relatively small when compared with the HCMC PC total expenditure of $190 million in 2011 on road maintenance and public transport, and the municipal government spent considerably more if capital expenditure on transport projects is included. It can therefore be concluded that the HCMC PC has the absorptive capacity to undertaken the additional expenditure associated with the project

D. Financial Management Arrangements and Capacity

10. The financial management assessment indicates that UTMD1 (i) follows standard government policies and procedures for accounting and financial management; (ii) has good accounting and financial management capacity and experience in managing domestically funded projects; and (iii) has implemented undertakings similar in magnitude to the project. However, UTMD1 has not implemented a foreign-financed project, and its managers and financial staff have little knowledge and experience with ADB requirements. UTMD1 has not implemented a project with the more complex features involved in the ADB project, in particular the purchase and installation of electronic equipment and the use of consultants for policy studies. Government audits are undertaken for all projects implemented by UTMD1 and random external audits are undertaken on their conduct.

11. UTMD1 will address these issues by gaining approval from city authorities for an expansion of its role to include implementation of infrastructure projects and engaging qualified consultants to help design and supervise works. A capacity building program to enable UTMD1 to meet its financial management obligations will include training provided by ADB to improve its policies, systems and procedures. UTMD will work closely with other agencies of the HCMC PC to ensure that their knowledge and experience is taken into account in the procurement of infrastructure and services under the project. External auditors will be engaged to undertake annual audits of the project, as required by ADB.

12. In addition, UTMD1 will need to establish an imprest account with appropriate subaccounts in its accounting system to facilitate the recording of financial transactions and to provide the basis for a management information system for the project. A mechanism will be established to minimize foreign exchange risks with regard to loan funds during project implementation. For all project staff, UTMD1 will enhance written descriptions to clearly define the roles, duties, responsibilities, lines of supervision, and limits of authority, as well as prepare a summary procedures and accounting manual in Vietnamese to aid project financial management. Special staff will manage the project funds; UTMD1 will recruit more staff if needed, including staff with English language skills; and seek more external assistance in financial management, if needed. The need to recruit more staff should be considered before training is provided by ADB to ensure that UTMD1 has the staff have the capacity needed to participate successfully in and gain the most from the training.

13. **Institutional strengthening needs**. An assessment has determined that training programs will be undertaken on (i) how the cost of the project was estimated and its contract packages were determined, its development partner contributions were identified, and its disbursement schedules were established; (ii) ADB's policies and procedures on financial management; (iii) ADB's policies and procedures on procurement and contract management; (iv) ADB reviews during project implementation; and (v) measures to ameliorate foreign exchange risks during project implementation.

14. **Auditing.** The Project will engage external auditors to audit the annual financial statements for the Project for the year then ended and assess the progress with the overall budget, in accordance with the acceptable accounting standards and conform with ADB procedures and guidelines. The audit will review the compliance with laws, regulations and funding agreements that have a direct and material financial effect on the entity's financial report. The effectiveness of internal control over compliance with requirements that could have a direct and material financial effect on the financial statements as well as internal control over financial reporting will be assessed.