



Financial Due Diligence

A Methodology Note



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6 ADB Avenue, Mandaluyong City
1550 Metro Manila, Philippines
Tel +63 2 632 4444
Fax +63 2 636 2444
www.adb.org

For orders, please contact:
Department of External Relations
Fax +63 2 636 2648
adbpub@adb.org

Financial Due Diligence – A Methodology Note

1. The Asian Development Bank's (ADB's) fiduciary responsibilities are derived from the Charter,¹ namely Article 14, which sets out ADB's operating principles. In particular, these include
 - *Article 14(vi): "In making or guaranteeing a loan, the Bank shall pay due regard to the prospects that the borrower and its guarantor, if any, will be in a position to meet their obligations under the loan agreement."*
 - *Article 14(xi): "The Bank shall take the necessary measures to ensure that the proceeds of any loan made, guaranteed or participated in by the Bank are used only for the purposes for which the loan was granted and with due attention to considerations of economy and efficiency."*
 - *Article 14(xiv): "The Bank shall be guided by sound banking principles in its operations."*
2. ADB meets this requirement by undertaking financial due diligence. ADB's financial due diligence requires that, during loan preparation and processing, sufficient analysis is undertaken to enable an informed assessment to be made with respect to project financial viability and long-term sustainability, and that the borrowers' financial and project management systems are, or will be, sufficiently robust to ensure that funds are used for the purpose intended and that controls will be in place to support monitoring and supervision of the project.
3. The *Financial Management and Analysis of Projects*² guidelines (the Guidelines) provide the framework for ADB's financial due diligence, namely completion of a financial management assessment (FMA) of the executing agency (EA) and/or implementing agency (IA), financial evaluation of the project, and assessment of implementation arrangements (from a financial perspective, including disbursement and auditing arrangements).
4. This financial due diligence methodology note offers a suggested approach for operationalizing the standard project preparation and loan processing requirements of the Guidelines. This note is to be read in conjunction with the Guidelines and relevant sections of ADB Operations Manual (OM). For financial intermediation projects, it is likely that additional activities will be

¹ ADB.1966. *Agreement Establishing the Asian Development Bank (The Charter)*. Manila.

² ADB. 2005. *Financial Management and Analysis of Projects (The Guidelines)*. Manila.

required and staff should be guided by OM D6.³ Furthermore, the Guidelines, together with the methodology note, should be seen as a reference guide to assist staff in conducting an appropriate degree of financial due diligence during project preparation and processing, and should guide staff in determining the appropriate level of financial management safeguards required for a given project and/or EA and/or IA. The advice, directions, and recommendations provided should not be regarded as a substitute for the professional judgment of ADB staff.

5. The methodology note provides specific guidance in four primary aspects of financial due diligence: (i) financial management assessment, (ii) project cost estimates and financing plan, (iii) financial analysis, and (iv) financial evaluation. It also provides guidance on assessing disbursement auditing arrangements.

³ ADB. 2003. Operations Manual D6. *Financial Intermediation Loans*. Manila. For private sector operations (PSO), while the methodology note may provide guidance with respect to standard approaches to financial analysis, the due diligence required will depend upon the risks assessed by the Private Sector Operations Department and in line with the PSO *Staff Instructions*.

Financial Management Assessment

*Reference to
the Guidelines*

Objective

1. Effective financial management within the EA and/or IA is a critical success factor for project sustainability, both in the effective use of funds and in the safeguard of assets once created. Irrespective of how well a particular project or program is designed and implemented, if the EA and/or IA does not have the capacity to effectively manage its financial resources, the benefits of the project are unlikely to be sustainable. 4.1
2. The objective of the financial management assessment (FMA) is to ensure that the EA and/or IA has, or will have, sufficiently strong and robust financial management systems and procedures in place to ensure sustainability of project investments and benefits over time. 4.2.6.3
3. The FMA is a review of the entity's systems for financial and management accounting, reporting, auditing, and internal controls. It also involves an assessment of the entity's disbursement and cash flow management arrangements, and governance and anticorruption measures. 4.2.8; 4.2.9
4. The FMA is not an audit; it is a review designed to determine whether or not the entity's financial management arrangements are sufficient for the purposes of project implementation. 7.7; 7.8; 7.9

Approach and methodology

5. The first step is to determine whether an FMA has recently been completed by ADB, the World Bank, or any other development partner, the objective being to avoid duplicating diagnostic work that already exists. 4.1.6
6. If an FMA exists, this should be reviewed and, in particular, any work done to overcome previously identified weaknesses should be checked. The original FMA can then be updated accordingly. *FM Addendum
p.14*

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7. If planning to rely on the work of another donor (i.e., the World Bank's FMA for the same EA), review the agency's assessment report to determine whether or not the results of the FMA are reasonable and can be accepted by ADB. Update the FMA as required.

7.7.1.4.5;
7.8.1.4.6;
7.9.1.4.5

Note: If the work of another donor has been relied upon, this should be noted in the report and recommendation of the President (RRP).

8. If an FMA has never been completed, or if there have been significant changes which render the FMA obsolete, then the following approach to the FMA is recommended:
- (i) Review country diagnostic studies, including the country financial accountability assessment, country procurement assessment report, country governance assessment, and diagnostic study on accounting and auditing.
 - (ii) Early in project preparation, have the EA and/or the IA and the future asset-owning entity, if appropriate, complete a financial management assessment questionnaire (FMAQ).
 - (iii) Review responses to the FMAQ, determine what (if any) additional information is required in order to be able to conclude whether or not the financial management arrangements (a) are capable of recording all transactions and balances, (b) support the preparation of regular and reliable financial statements, (c) safeguard the entity's assets, and (d) are subject to audit.
 - (iv) Review past audit reports and audit management letters to assess what concerns have previously been raised on systems and internal controls.
 - (v) Form a conclusion with respect to whether or not the financial management arrangements and financial and project accounting systems can be relied upon for the purposes of the project.

*FM Addendum
p.16*

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- (vi) If issues and/or weaknesses are identified, determine the most appropriate mitigation measures (e.g., restructuring finance sections, increasing finance staff, filling vacant posts, developing new systems, developing financial reporting, training, etc.). 4.2.1
 - (vii) Determine whether, given the findings, it is necessary to include a project component to strengthen financial management in the EA and/or IA and/or establish or strengthen a project implementation or project management office via either technical assistance or consultant support within the project. 4.2.2

Reporting findings, conclusions, and recommendations

- 9. A brief summary of the FMA should be included in the main body of the RRP. The summary should provide an indication of how the financial management capacity was assessed, the results of the assessment, proposed changes to strengthen existing capacity, and an indication of how the financial management arrangements which have been designed for the project reflect the results of the assessment. *FM Addendum p.31*
- 10. The detailed FMA can be incorporated into the sector analysis appendix, the financial analysis appendix, or it can be a stand-alone appendix. If the FMAQ was used, it should also be provided as a supplementary appendix.

Specific requirements for program loans

- 11. Given the budgetary implications of program lending, the FMA for program loans should attempt to assess the capacity of the borrowing government to effectively manage financial resources. 4.2.9.3
- 12. The Charter obligation that ADB funds be used for their intended purpose applies equally to project and program lending. The following approach should be followed: 1.2.1
 - (i) Review the relevant country diagnostic studies with a focus on central government systems and funds management practices. 4.2.5.1

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|-------|---|-----------------------------|
| (ii) | Review the flow of funds mechanisms proposed for the program, assess adequacy, and suggest measures to improve performance and reduce inefficiencies. | <i>FM Addendum
p. 1</i> |
| (iii) | If loan proceeds are to be provided to a line ministry, seek audited financial statements for the ministry as a whole, based on the government's chart of accounts. | |
| (iv) | If findings indicate that significant weaknesses exist in country systems, consideration must be given to providing assistance to address these weaknesses. | 4.2.2.1 |

Specific requirements for sector loans

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| 13. | Sector loans require completion of a detailed sector analysis. | 2.2.3 |
| 14. | The sector analysis should include a review of the expenditure structure, sustainability of investments, intra-sector resource allocations, etc. | <i>OM D3</i> |
| 15. | The findings of the financial management review within the sector should be documented as a component of the overall sector analysis and specifically noted in the RRP. | |

Specific requirements for sector development programs

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| 16. | A sector development program combines a policy-based loan with an investment loan. The FMA should cover both the program loan aspects (as noted above) and a review of the EA's financial management capacity with respect to the investment component. | <i>OM D5</i> |
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Project Cost Estimates (Investment Plans) *Reference to the Guidelines*

Objective

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| 17. | When reviewing the cost estimates, the financial due diligence objectives are to assess the adequacy of the cost structure and the reasonableness of targeted unit outputs and unit cost assumptions, and confirm the estimation of taxes and duties, contingencies and interest, and other charges during construction. It is important to have confidence in the reasonableness of the cost estimates, as this is the primary input into the assessment of a project's financial viability. | 3.4.1.3;
3.4.2;
3.4.3.5 |
|-----|---|-------------------------------|

Approach and methodology

18. Cost estimates can be prepared using specialized cost estimation software (for example, engineering estimates of major infrastructure projects), COSTAB, or Microsoft Excel. The *Technical Note on Preparation and Presentation of Cost Estimates*⁴ provides clear instructions on the preparation and presentation of cost estimates and a financing plan in an RRP. In preparing cost estimates, the following approach should be followed:
- (i) Project costs are computed in domestic currency units, with foreign exchange costs translated into domestic currency units at the projected exchange rate for the year of expenditure. 3.4.2
3.4.3.1
 - (ii) Project costs are prepared in nominal terms, taking into account the effects of inflation and foreign currency fluctuations. 4.3.6.1.1
 - (iii) Cost estimates should be produced in constant base-year prices, with year 0 being the year in which the project will be considered by the Board. Base cost estimates should be no more than 6 months old. 3.4.3.3.1
 - (iv) Purchasing power parity is the base assumption, with exchange rates expected to fluctuate in accordance with the following formula: 3.4.4.3

$$ER_n = ER_{n-1} * [(1+i(d)_{n-1})/(1+i(f)_{n-1})]$$

where ER_n = exchange rate year n
 ER_{n-1} = exchange rate year n-1
 (year of base cost estimate)
 $i(d)_{n-1}$ = domestic inflation rate year n-1
 $i(f)_{n-1}$ = international inflation
 year n-1
 - (v) Physical contingencies are based on engineering estimates and/or specifics with respect to the project components. Physical contingencies should be based on risks and can be computed on an individual component basis. 3.4.4.2;
3.4.4.3

⁴ ADB. 2008. *Preparation and Presentation of Cost Estimates for Projects Financed by the Asian Development Bank*. Manila.

- (vi) Price contingencies should be based on Domestic and International Cost Escalation Factors as projected by ADB's Economics and Research Department and posted on the ADB intranet.⁵ The price contingency should be computed from the first year following the base year. For example, if costs are produced in 2008 prices, then the price contingency should be computed from years 2009 onward. As base cost estimates are to be no more than 6 months old at the time of Board consideration, the price contingency for the first year (i.e., 2009) should be 50% of the computed total. From the second year onward, the full price contingency is assumed. 3.4.4.3
- (vii) Taxes and duties should be disclosed separately as a separate line item within the base cost line, and the basis for computing price and physical contingencies and interest and other charges during construction should also be included as a note to the table. 3.4.3.6
- (viii) Interest and other financing charges during construction are capitalized and computed using interest rates in effect at the time of project appraisal. On ADB debt, the front-end fees and/or commitment charges may be applied (refer to ADB's loan regulations).
- (ix) In computing the interest during construction for variable or floating rate debt (i.e., ADB's London interbank offered rate [LIBOR]-based loan product), the applicable 5-year fixed swap rate should be assumed, plus a provision for ADB's spread of 0.20%. This rate is updated daily and is available on the internet.⁶ 3.4.3.4.3;
3.5.2.2.2

⁵ Domestic and International Cost Escalation Factors 2008–2012. Available: <http://lnadbg1.asiandevbank.org/erd0004p.nsf>

⁶ Indicative Lending Rates for Loans under the LIBOR-Based Loan Facility & Cap/Collar Premiums for Floating Rate Loans. Available: www.adb.org/Documents/Brochures/Libor/indicative_rates.pdf

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- (x) With respect to sector projects, OM D3 (Sector Lending) indicates that physical and price contingencies are not required. However, for the candidate subprojects, contingencies must be computed and presented in the detailed cost estimates for candidate subprojects. If sufficient information is known with respect to the subprojects, it is suggested that contingencies be computed (on the basis of engineering estimates), with a footnote indicating that the taxes and duties and contingencies include estimates for future subprojects based on indicative cost estimates and will be recalculated as subprojects are being evaluated.

3.4.4;
OM D3

- (xi) Commitment charges are calculated at a flat rate of 0.15% for project and program loans, beginning 60 days after the signing of the loan agreement, and are accrued from the date of effectiveness. No commitment charges are applied to loans financed from the Asian Development Fund. The formula to be applied in computing commitment charges is

OM D1

$$CF = [(U0 + U1) \times R] / 2$$

Where: CF = commitment fee

U0 = undisbursed loan balance
at beginning of year

U1 = undisbursed loan balance
at end of the year

R = rate

- (xii) The assumptions made in preparing costs, together with electronic copies of financial models prepared, should be retained in the division files for later user in project completion reports (PCRs) or project performance audit reports (PPARs).

Reporting findings, conclusions, and recommendations

19. A detailed cost breakdown per component and/or expenditure category should be prepared. These detailed cost estimates should provide detailed information with respect to specific cost categories, estimates presented in domestic currency units, etc. The detailed cost breakdown per component and/or expenditure category should be included in the RRP as a detailed cost estimates appendix with further details, if available, provided in a supplementary appendix.
20. A summary cost estimate table should be provided in the main body of the RRP as a Project Investment Plan, which should be presented in US dollars (total amounts per line item). Detailed cost estimates should be presented with the breakdown (in dollars) between local and foreign expenditure category per line item. The detailed table can also be shown in local currency terms. The cost proposed for retroactive financing,⁷ and investment and recurrent cost,⁸ should be presented as a separate project component and should be clearly identified.

*Technical Note
on Preparation
and
Presentation of
Cost Estimates*

Project Financing Plans

*Reference to
the Guidelines*

Objective

21. The financial due diligence objectives of this component are to (a) assess the existing capital structure of the EA and/or IA (if applicable), (b) assess the availability of government counterpart financing, (c) ensure that counterpart financing requirements are clearly identified in either the government budget and/or the medium-term expenditure framework, (d) assess the veracity of the commercial and/or official cofinancing (where applicable), and (e) assess the reasonableness of the EA's/IA's self-financing capacity (where applicable).

⁷ ADB. 2006. *Operations Manual H4. Retroactive Financing*. Manila.

⁸ ADB. 2006. *Operations Manual H3. Cost Sharing and Eligibility of Expenditures for ADB Financing*. Manila.

Approach and methodology

22. In preparing the financing plan, the following approach should be followed:

- (i) The financing plan should be prepared in domestic currency units, with foreign exchange funds being translated into domestic currency units at the projected exchange rate for the year of drawdown. 3.4.7.5;
4.3.6.1.4
- (ii) The drawdown schedule should be estimated on the basis of annual expenditure projections.
- (iii) The financing plan should cover base costs, physical and price contingencies, interest and other charges during construction, and project foreign exchange gain or loss, as applicable.
- (iv) The veracity of the financing plan should be addressed, including (a) an assessment of the EA's capacity to provide counterpart financing (self-financing); (b) capacity within the national and/or local government budget to support the project; and (c) the firmness of local bank, commercial, or donor cofinancing.
- (v) The financing plan should indicate the percentage of total cost to be funded from each source. However, it does not need to indicate financing ratios by cost category or project component.
- (vi) The assumptions made in preparing the financing plan, together with electronic copies of the financial models, should be retained in the division files for later use in PCRs or PPARs. 3.7.3.6.3;
4.3.6.5.1

Reporting findings, conclusions, and recommendations

23. A summary of project funding requirements should be provided in the main body of the RRP as the Project Financing Plan, presented in dollars. However, details in both domestic currency units and dollars may be presented in the detailed cost estimate appendix or supplementary appendix. Details should also be provided with respect to lending, relending, and onlending arrangements and terms. An indication should be given with respect to the veracity of the financing plan (i.e., what if any steps have been taken to assess the availability of resources from various funding sources).

Objective

24. The objective of the financial analysis is to assess whether or not the proposed investment is financially sustainable. To determine whether or not a project investment is viable, it is necessary to assess the impact of the investment on the borrower.

- **For revenue-generating projects:** *Financial analysis includes the preparation of projected financial statements (income statement, balance sheet, and cash flow) combined with ratio analysis to test the robustness of the financial position of the borrower over time.*
- **For non-revenue-generating projects:** *Financial analysis includes the preparation of projected incremental recurrent costs together with an assessment of the borrower's capacity to absorb these costs (and any associated debt service obligations).*

Approach and methodology: revenue-generating projects

25. A financial model, comprising projected balance sheet, income statement, and cash flow projections, including projections of key financial ratios, is to be prepared in order to assess the impact of the proposed project on the borrower's financial performance and financial position. The following approach is suggested:
- 3.7.3.6.3;
4.3.6.5.1
- (i) Financial projections should be completed for the EA and/or IA, not for the project alone, unless the EA/IA is a sole-purpose entity (i.e., it has been established for the sole purpose of the project).
 - (ii) Financial projections should be prepared in nominal terms taking into consideration the potential impact of inflation and/or currency fluctuations.

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- (iii) Financial projections should be prepared in domestic currency units with foreign currency items (i.e., foreign currency denominated debt, foreign currency costs for imported materials, etc.) being translated into domestic currency units at the projected exchange rate. 3.4.7.6;
4.3.6.1.4
- Purchasing power parity is the base assumption, with exchange rates expected to fluctuate in accordance with the formula provided in para 18.
- (iv) The financial statement formats should be derived from the financial statement format used by the EA (following the structure of the EA's existing chart of accounts, provided these formats provide sufficient information).
- The financial projections should use the last audited financial statements for opening balance sheet assumptions. Current year estimates should be used as the base-year data.
- (v) Summary historical financial statements should be presented, together with the financial projections for the implementation (or construction) period and a minimum of 5 years (and maximum of 10 years) of operations. 3.4.7.1;
4.3.5.2.4
- Detailed financial projections, together with key assumptions, should be provided as a supplementary appendix.
- (vi) A risk assessment should identify those cost and revenue elements subject to uncertainty and/or those amounts significant enough that a change to them could materially affect the financial projections.
- Key risks and/or significant items should be modeled and assumptions provided in the model documentation.

- In preparing the model, and based on the risk assessment, specific assumptions should be considered for the income statement (tariff assumptions, cost assumptions, etc.), balance sheet (asset capitalization, depreciation, accounts receivable, etc.), and cash flow.
- The model should be designed in an integrated fashion (i.e., looking at the income statement, balance sheet, and cash flow impact of each core assumption).
- Basic assumptions used in the financial model should be consistent with those used for the economic analysis.
- The assumptions made in preparing the financial projections, together with electronic copies of the financial models, should be retained in the division files for later use in PCRs and PPARs. 4.3.6.5.3

26. In addition to financial projections, key operating and financial ratios as appropriate to the sector should be computed for the duration of the financial projections. In addition, operating ratios specific to the project and sector should be considered. Key ratios should be incorporated into loan covenants and should be monitored throughout project implementation. For further information, refer to Attachment 1. 4.4.6

Approach and methodology: non-revenue-generating projects

27. While full financial statement projections may not be relevant for non-revenue-generating projects, the following approach should be followed:
- (i) The overall financial position of the borrower should be reviewed, initially at a high level, to assess its current and long-term financial viability.
 - (ii) Financial projections should be prepared for incremental recurrent costs (operating costs, maintenance costs, salaries, supplies, etc.).

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- (iii) The budget position of the borrower should be reviewed to determine the potential impact of recurrent costs on the overall financial position.
 - (iv) If the EA does not have sufficient resources to cover recurring costs, assurances should be sought for additional transfers from the national budget to support the shortfall.
 - (v) In those cases where funds have been established to support ongoing operating and maintenance costs (for example, a road maintenance fund), cash flow projections (revenue and expenses) should be completed for the fund and assurances sought that user charges will be increased and/or budget transfers will be provided to meet projected cash shortfalls.
 - (vi) The projected recurrent costs and/or cash flow projections should be included in the financial appendix of the RRP. Detailed financial analysis could be provided as a supplementary appendix.
 - (vii) The assumptions made in preparing the financial projections, together with copies of the financial models, should be retained in the division files for later use in PCRs and PPARs.

4.3.6.5.3

Reporting findings, conclusions, and recommendations

- 28. The results of the financial analysis should be summarized and included in the main body of the RRP to support the overall conclusion reached on sustainability.
- 29. Summary historical financial statements should be presented as an appendix to the RRP, together with financial projections for the implementation period and 3–5 years of post-implementation operations. The financial analysis could be included (i) in the sector analysis appendix, (ii) together with the economic analysis in one appendix, or (iii) as a stand-alone appendix.
- 30. The projected recurrent costs and/or cash flow projections should be included in the financial appendix of the RRP.

Objective

31. The objective of this component is to assess whether the proposed project is viable. The financial evaluation of ADB's commercial (revenue-generating) projects consists primarily of a comparison between the financial internal rate of return (FIRR), which represents financial benefits, and the weighted average cost of capital (WACC), which represents financial costs. If the FIRR exceeds the WACC the project is deemed to be financially viable. 3.5.2.1.1;
3.5.3.1
32. Non-revenue-generating projects are not subject to FIRR and WACC assessment. Instead, reliance is placed on financial sustainability as outlined in paras 28–30.

Approach and methodology: financial internal rate of return

33. The FIRR should be computed for all revenue-generating projects. The following approach is recommended for computation of the FIRR:
- (i) The FIRR is computed for the project, not the EA or IA as a whole.
 - (ii) The FIRR is computed on an after-tax basis in real terms. The nominal with-project cost estimates and financial cash flows are converted to real terms by removing the impacts of inflation and potential currency fluctuation. 3.5.3
 - (iii) Cost estimates are further adjusted by removing interest and other financing charges during construction (for example, commitment charges).
 - These cost elements relate to the capital structure or the financing decision rather than to the investment decision. The FIRR is an attempt to measure whether or not the investment is appropriate, not whether or not the financing structure is appropriate.

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- (iv) The FIRR is computed on an incremental with-project versus without-project basis.
- Project cash flows are calculated by subtracting projected cash flows in real terms for the without-project scenario from projected cash flows in real terms for the with-project scenario.
 - In the absence of the project (the without-project scenario), the income statement, balance sheet, and cash flow assumptions will be different from the with-project scenario. For example, without the project the entity may incur higher operating costs, earn less income, or invest in alternative projects.
- (v) The FIRR should be computed over a realistic useful life of the assets, not necessarily over the term of ADB's loan.
- (vi) If the FIRR is computed for a period shorter than the expected useful life of the assets, the assets are considered to have a residual value (equal to the undepreciated value of project investments). The residual value is included as a financial cash flow in the last year of the FIRR computation.
- (vii) The FIRR and the economic internal rate of return should be computed over the same period of time.
- (viii) An electronic copy of the financial model used to compute the FIRR should be retained in the division files for later use in PCRs and PPARs.

Approach and methodology: weighted average cost of capital

34. The WACC measures the expected financial costs associated with financing the project. The following approach is recommended for the computation of the WACC: 3.5.2.2.1

- (i) The WACC is computed on an after-tax basis in real terms. The nominal financial cash flow is converted to real terms by removing the impacts of inflation and potential currency fluctuation. 3.5.2.2.2
- (ii) The cost of debt is computed as follows: 3.5.2.2.2
- It should include interest, service charges, commitment fees, and front-end fees as applicable.
 - It should be based on the face value interest rate of the debt instrument (for example, the bond coupon rate or the interest rate applicable to a particular loan).
 - If the interest rate is a variable (versus fixed interest) rate, as is the case with ADB's LIBOR-based loan products, the applicable 10-year fixed swap rate should be used, plus a provision for ADB's spread of 0.20%.
 - The cost of debt is converted to an after-tax cost by multiplying the interest rate by (1-tax rate). This reflects the fact that interest is a tax deductible expense in most jurisdictions.
 - The nominal cost of debt is converted to the real cost of debt by applying the following formula:

$$CD_r = [(1 + CD_n) / (1 + AI)] - 1$$

where: CD_r = after tax cost of debt in real terms
 CD_n = after tax cost of debt in nominal terms
 AI = average applicable inflation rate

The average domestic inflation rate should be used for debt denominated in domestic currency units, while international inflation rates should be used for foreign currency denominated debt. Inflation rates to be used are computed annually by the Economics and Research Department (ERD) and posted on the intranet.

(iii) The cost of equity represents the opportunity cost of investing in the project. The most appropriate cost of equity would be the government's economic cost of capital. However, in most cases, the economic cost of capital is difficult to determine.

- The cost of equity should reflect the government's cost of raising capital, the tenure of the investment, and the risks associated with the project. 3.5.2.2.2
- One approach to establishing a cost of equity would be to consider the government's long-term bond rate (presuming bonds are issued and are deemed to be risk free), adjusted upwards to reflect the term (i.e., bonds are often issued for 5–15 years, while project investments tend to cover a longer period), and then adjusted upwards to reflect the project risks.
- Another approach would be to consider the desired rate of return for an equally risky venture were it to be financed through the private sector. The capital asset pricing model could be used for this computation. However, emerging markets may be relatively small and underdeveloped, and so determining an appropriate beta coefficient and market premiums may be problematic. In the absence of such a beta, one approach would be to use a US beta or betas for neighboring countries for the relevant sector and adjust upwards to reflect the country and project risk. The formula to be applied is:

$$\text{Nominal Cost of Equity} = R_f + B * (R_{Pm}) + R_{Po}$$

Where: R_f = the risk free interest rate
(i.e., government treasury bills)
 B = the equity beta
 R_{Pm} = the market risk premium
 R_{Po} = other premiums as necessary to reflect project-specific risks

- The nominal cost of equity should be converted to real cost of equity following the same approach noted above.
- The WACC is computed by weighting the cost of each element in the financing plan by its proportionate contribution to the overall financing plan. 3.5.2.2.2

Financial evaluation and sensitivity analysis

35. The financial evaluation of ADB's investment projects consists of a comparison between the FIRR (representing financial benefits) and the WACC (representing financial costs). If the FIRR exceeds the WACC the project is deemed to be financially viable. It should be noted that financial sustainability also requires a net positive cash flow throughout the project operating life. 3.5.3.4
- (i) The FIRR, WACC, and key financial and operating ratios should be subjected to sensitivity analysis. The actual scenarios to be tested should be based on key project risks. Common scenarios include (a) project cost overrun, (b) implementation delays, (c) revenue performance lower than projected, (d) expenditures higher than projected, and (e) other project-specific sensitivities. Combinations of likely impacts (for example, an implementation delay automatically increases project costs) should also be considered where relevant. Should floating interest rate debt be obtained (for example, ADB's LIBOR-based loan product), it may also be prudent to test for extreme variations in the cost of long-term debt. 3.4.4.1.8;
3.5.1.4;
3.5.4; 7.11
- (ii) It should be noted that the WACC will remain constant under most scenarios, with the exception of those resulting in either a cost overrun or construction delay. In the case of an overrun, an assumption with respect to financing the excess cost will be required as ADB does not finance overruns.

Reporting findings, conclusions, and recommendations

36. The assumptions used to compute the FIRR, together with a table indicating how the FIRR was computed, should be provided in the financial evaluation appendix to the RRP.
37. The assumptions used in computing the WACC, and the associated computation, should be included in the financial evaluation appendix of the RRP.
38. The RRP should clearly state the basic assumptions under which the financial evaluation was undertaken, and include a summary of sensitivity analysis and a statement with respect to project viability as indicated in the following example:

“The financial evaluation of the Project was undertaken in real terms using constant 200X prices. The project cost estimates and financial projections in nominal terms were converted to real terms by adjusting for the projected effects of foreign and domestic inflation and currency fluctuation. Incremental costs and benefits were derived by evaluating the financial position of the executing agency under with-project and without-project scenarios. The financial internal rate of return (FIRR) for the Project, computed on an after-tax basis, is x.x%. This compares favorably with the weighted average cost of capital (WACC), also computed on an after-tax basis, of y.y%. The Project is considered both financially viable and sustainable. Sensitivity and risk analysis indicates that the FIRR is robust under adverse conditions. The analysis is summarized in Table x; a more detailed financial evaluation is provided in Appendix y.”

Disbursement Arrangements

Objective

39. The objective is to ensure that the most efficient and effective disbursement arrangements are in place to support project implementation.

Approach and methodology

40. Once cost estimates have been finalized, the financial management arrangements assessed and implementation arrangements agreed determine the most appropriate disbursement arrangements, including the need for the required capacity to manage imprest accounts.
- (i) In line with disbursement arrangements and cost estimates, the use of imprest accounts would have been finalized separately based on an FMAQ.
 - (ii) Assess the capacity of each EA and/or IA to manage imprest accounts (including monthly bank account reconciliation and liquidation) and whether capacity development or other mitigating measures are required.

Reporting findings, conclusions, and recommendations

41. The RRP should clearly disclose the disbursement arrangements, including funds flow mechanisms. If disbursement arrangements are complex, specific information on how funds flow will be managed (from an internal control perspective) should be provided.

*Reference to
the Guidelines*

Auditing Arrangements

Executing agency an/or project implementing agency

42. For revenue-generating projects, ADB requires a general purpose audit report covering the audited financial statements for each EA and/or project IA associated with the project, together with a management letter, by agency. The financial statements should be prepared and the audit conducted in accordance with accounting and auditing standards acceptable to ADB. International Financial Reporting Standards (currently referred to as International Accounting Standards) and International Standards on Auditing are used as benchmarks in determining whether or not standards are acceptable to ADB.
- 5.4.2.1
5.6.10.1
5.2.3; 5.4.2.1;
5.6.1.1

Project accounts

43. ADB requires a special-purpose audit of project accounts. The engagement letter (issued by the EA/borrower to the external auditor) for the special-purpose audit should lay down the coverage of the audit and nature of the audit opinion required, including statements with respect to
- (i) the scope of the special-purpose audit report and its use (including standards under which it was prepared), including period covered;
 - (ii) the accounting standards under which the financial statements were prepared; 5.6.2.8
 - (iii) the standards under which the audit was conducted;
 - (iv) the audit opinion covering current and cumulative project activity, including how any outstanding audit observations have been dealt with;
 - (v) compliance with financial covenants in the loan and project agreements; and 5.6.4
 - (vi) the application of ADB's funds and that they have been used for their intended purpose.

Management letter

44. In those cases where a management letter is not received for the entity as a whole, a management letter covering internal controls and procedures associated with preparation of project accounts is required and should be submitted together with the audited project accounts.

Statement of expenditures and imprest account

45. If a statement of expenditure and/or imprest fund facility has been provided, the special-purpose audit should include a separate opinion on (a) utilization of the imprest account; (b) statement of expenditures, including whether the amount claimed was duly supported to the extent verified; and (c) whether or not the EA was operating the imprest account in accordance with ADB's procedures. 5.4.3.10; 5.6.9; Appendix 10

Unaudited or draft financial statements

46. Submission of unaudited/draft financial statement may be requested but should not be used to determine compliance with loan and/or project agreement covenants. 5.3.2.9

Audit deadlines

47. Audited financial statements (for the EA, project accounts, and imprest fund as applicable) should be submitted to ADB not more than 6 months following the end of the fiscal year or project closing date (whichever comes first). This reporting period could be extended to 9 months as follows: 5.3.2.9
- (i) In cases of weak institutional capacity, submission of audited financial statements/ audited project accounts can be started at 9 months and later be reduced to 6 months over the course of project implementation.
 - (ii) In cases of decentralization, the deadline could be extended up to 9 months if logistical considerations are such that they would impact the physical flow of information.
 - (iii) As state-owned enterprises are expected to behave as a corporate entity and operate on commercial principles, no exceptions beyond 6 months should be considered for submission of audited financial statements and project accounts.

Attachment 1: Quick Guide to Financial Ratios

Performance Indicator	How It is Calculated	What It Shows
<i>Profitability Indicators:</i>		
Operating Ratio	Net Income Before Interest and Taxes <i>divided by</i> Revenues	Indicates the entity’s profitability from current operations not including any interest charges accruing as a result of the capital structure.
Net Profit Margin	Net Income after Interest and Taxes <i>divided by</i> Revenues	Illustrates after tax profit margin. Lower than expected profit margins could indicate that the entity’s pricing structure (tariffs) is too low or that costs are relatively high, or both.
Return on Net Assets	Net income before interest and taxes ¹ <i>divided by</i> Average total assets (assets at the beginning of year, plus assets at end of year <i>divided by</i> 2)	Evaluates the effectiveness of the entity’s ability to utilize assets to create profits. A well managed entity limits its investment in non-productive (i.e., not revenue generating) assets.
Return on Equity (ROE)	Net Income before Interest and taxes ¹ <i>divided by</i> Owners’ equity ²	Measures the entity’s historic ability to generate profits from owner’s investments. This information is valuable to potential equity investors. Regulators also rely heavily on this calculation under the “ROE” concept of tariff development.

¹ The calculation excludes charges for interest and taxes to arrive at the numerator. Interest is a cost associated with the capital structure and taxes, while in some cases can be managed by an entity, are not directly under management’s control.

² Equity includes owner’s contribution (either shareholders or government investment) plus any accumulated profits (i.e., cumulative net income that has not been distributed).

Performance Indicator	How It is Calculated	What It Shows
Revenues per employee	Total Sales (Revenues) <i>divided by</i> Number of Employees	Measures the efficiency of entity operations in terms of overall staff levels. This is a particularly useful ratio for reform or restructuring projects.
<i>Debt Management Indicators:</i>		
Debt to Assets Ratio	Total Debt <i>divided by</i> Total Assets	Measures the extent to which borrowed funds have been used to finance the entity's operations.
Debt to Equity Ratio	Total Debt <i>divided by</i> Total Equity	Measures the extent to which operations are financed by creditors (debt) rather than owners (equity).
Long-term Debt to Equity	Total Long-term Debt (maturity greater than one year) <i>divided by</i> Total Equity	Illustrates the balance between debt and equity in the entity's long-term capital structure.
Debt Service Ratio	Cash flow from Operations <i>divided by</i> Annual debt service obligations (interest and principal)	Used to evaluate the entity's ability to service (i.e., pay both principal and interest) its debt out of current operating cash flows. Lenders will rely on this ratio to continually evaluate the security of their outstanding debt instruments.

Performance Indicator	How It is Calculated	What It Shows
<i>Liquidity Indicators:</i>		
Current Ratio	Current Assets ³ <i>divided by</i> Current Liabilities	Indicates the extent to which the claims of short-term creditors (suppliers, bankers, etc.) are covered by assets that are expected to be converted to cash in the same period (i.e., 1 year). The current ratio is of primary concern as it measures the ability of an entity to meet its current obligations without having to liquidate long-term, productive assets.
Quick Ratio	Current Assets – Inventory <i>divided by</i> Current Liabilities	Measures the entity's ability to meet short-term debt obligations with the cash equivalents on hand. "Quick" assets are those that could be converted to cash quickly. Another variation is the "acid test" ratio, when calculated as "cash divided by current liabilities."

³ "Current" assets and liabilities have a maturity of 1 year or less. Current assets usually include cash, accounts receivable, prepaid assets, etc. Current liabilities include bank overdraft, accounts payable, accrued liabilities, and the "current" portion of long-term debt (i.e., the amount to be repaid over the next year).

Performance Indicator	How It is Calculated	What It Shows
Self Financing Ratio	Cash Flow from Operations <i>divided by</i> Average Capital Expenditures (usually calculated over a 3-year period)	The Self Financing Ratio is most commonly applied to utility operations. It measures the extent to which the entity generates sufficient cash to finance ongoing capital expansion. This information is valuable to the owner's when projecting cash needs, but can also provide an indicator of excessive investment programs.
<i>Asset Management Indicators:</i>		
Days sales in Receivables	Accounts receivable <i>divided by</i> Annual Revenues <i>divided by</i> 360 days	Illustrates the average collection period of accounts receivable. Also referred to as "days sales outstanding," it represents the average length of time between billing and collection.
Fixed Asset Turnover	Revenues <i>divided by</i> Net Fixed Assets (historic costs minus accumulated depreciation)	Measures how effectively the enterprise uses plant and equipment.
Total Asset Turnover	Revenues <i>divided by</i> Total Assets	Provides a measure of whether or not an entity is generating a sufficient volume of business given its total asset base.

Financial Due Diligence Methodology Note

This publication provides specific guidance in four primary aspects of financial due diligence: financial management assessment, project cost estimates and financing plan, financial analysis, and financial evaluation. It also provides guidance on assessing the project's disbursement and auditing arrangements. This document is a summary of the key steps involved in assessing project's financial viability and sustainability.

About the Asian Development Bank

ADB's vision is an Asia and Pacific region free of poverty. Its mission is to help its developing member countries substantially reduce poverty and improve the quality of life of their people. Despite the region's many successes, it remains home to two thirds of the world's poor. Nearly 1.7 billion people in the region live on \$2 or less a day. ADB is committed to reducing poverty through inclusive economic growth, environmentally sustainable growth, and regional integration.

Based in Manila, ADB is owned by 67 members, including 48 from the region. Its main instruments for helping its developing member countries are policy dialogue, loans, equity investments, guarantees, grants, and technical assistance. In 2007, it approved \$10.1 billion of loans, \$673 million of grant projects, and technical assistance amounting to \$243 million.

Asian Development Bank
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1550 Metro Manila, Philippines
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