



PIDP

Pacific Islands Development Program

Multinational Corporations in the Pacific Tuna Industry

FINANCING A TUNA PROJECT

by

Boris Skapin
and
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FOREWORD

At its inaugural meeting in Pago Pago in 1981, the Pacific Islands Development Program was directed by the Standing Committee of the Pacific Islands Conference to evaluate the potential beneficial role of multinational corporations in the Pacific islands region. In 1984, the Standing Committee again addressed the question of multinational corporations and approved this study to be undertaken on a sectoral basis, with the tuna industry being the first sector to be examined.

The tuna industry was selected as the first sector for investigation by the Standing Committee because the tuna fishery and industry in the Pacific islands region affects all countries and territories. The broad objectives of the tuna sectoral study are (1) to analyze the current and future role of multinational corporations in the tuna industry in the Pacific islands region, and (2) to evaluate the potential contribution these corporations could make to industry development in the region. This is the first time that a comprehensive study of the tuna industry in the Pacific islands region will focus on regional and international issues affecting the industry from the perspective of all island countries.

A proposal outlining the tuna sectoral study was drawn up in 1984. This was done in consultation with the Forum Fisheries Agency and research commenced in January 1985. The study will produce a range of technical reports that will address issues critical to the development, management and expansion of tuna industries in the Pacific islands region.

This report, prepared by Boris Skapin and William S. Pintz, analyzes critical aspects of financing tuna ventures. The report addresses financial planning, risk, debt and sources of funds.

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ABSTRACT

Financing tuna ventures is a complex and substantial undertaking. This report attempts to explain in a non-technical way the nature of, and problems associated with, financing large-scale tuna fishing and/or canning projects in the Pacific islands region.

After a general introduction, the report outlines the components of a financing plan. This is followed by a review of finance and risk, including risk spreading, sharing and hedging. Sources of debt are then discussed along with the financing environment for industrial projects. International mechanisms for encouraging risk taking by lenders and investors are evaluated and the terms and conditions of loans reviewed. The nature of tuna fishing as viewed by lenders is examined and the consequences of project collapse discussed.

The second part of the report focuses on issues associated with raising funds for finance ventures.

The conclusion summarizes the report's salient points and notes that no financial wizardry can substitute for strong project prerequisites.

TERMS OF REFERENCE

The purpose of this study is to examine the appropriateness of various financial strategies for the tuna industry in light of different development situations in Pacific island countries. Particular attention will be given to the implications of loan guarantees vis-a-vis the public debt of major fishing centers.

- (a) An analysis shall be provided of the capacity of selected island countries to directly assume additional public debt to finance new or expanded fishing ventures.
- (b) A further study shall examine the implications of Pacific nations becoming involved with financing and utilizing "contingent-conditions" requiring investors to stand behind venture debt under contractually defined default conditions.
- (c) The consultant shall also provide a qualitative analysis of the consequences of fish financing or domestic capital markets where such capital markets are sufficiently developed to support either domestic bank borrowings or placement of equity stock issues.

FRAMEWORK FOR FINANCE

Background

The successful financing of a tuna venture—whether it includes a fishing vessel, a shore-base, and/or a cannery—is a substantial and complex undertaking. In addressing such an undertaking it is important that the principal project sponsors, in this case, Pacific island governments, are familiar with and understand both the framework within which the necessary funds are to be obtained or made available and the implications of different financial structures. Finding and maintaining an appropriate financial structure in a timely manner while putting together other project elements can make a major difference in the likely success or failure of the fishing operation. However, finance, in itself, can never substitute for the fundamental elements of the project. If sound marketing arrangements are not made, if efficient catching and/or canning with rigid cost control and qualified management do not exist, or if such a project is not internationally competitive, the project will fail irrespective of the financial structure. Indeed, much of the laborious effort and documentation required to raise funds is designed primarily to insure that the venture is fundamentally viable.

A host government has often substantial policy interests in the financial structure of commercial fishing ventures whether or not it is a direct financial participant. Although it would probably be imprudent to attempt to regulate or control the financial strategies pursued by purely private tuna operations and/or operations with foreign partners, the host government has, if nothing else, direct tax and foreign exchange concerns to protect. These concerns suggest that the government should take an active interest in how the funding—in a form of equity or/and loans—for a new fishing project is assembled.

Where the government is the principal sponsor or a major equity participant in a joint venture tuna project, additional policy questions relating to the sharing or leveling of risks, the liability exposure, the preemption of lender quotas and others become important. In joint ventures, the interests of the parties involved coincide on some points and diverge on other. With this interest mix the common denominator is managed through financial or money yardsticks. Where divergence of interests occur, any project sponsor—in this case, Pacific island government—must be prepared to vigorously present its viewpoint, defend its position and negotiate the best deal. The first step in mastering this process is to understand the overlying concerns and objectives of the project equity investors, lenders, public agencies and private entrepreneurs in organizing finances to start the project operations. In this paper we concentrate on how to successfully put together a financing plan for a tuna project, and not so much on what later, when the venture is already operating, the financial concerns of management.

Financing plan

It might be useful if initially the reader is reminded of a general or standard structure of a financing plan for any project, including a fishing project. The following plan could be used:

	Local currency	Foreign currency	Total (US\$000)
EQUITY			
Share capital			
Sponsor 1			
Sponsor 2			
Sponsor 3			
Other forms of equity or quasi-equity (subsidized loans)			
Cash during construction (or expansion)			
Subtotal equity			
LOANS			
Source 1			
Source 2			
Source 3			
Subtotal loans			
TOTAL			

In designing the finance plan, one has to start with the estimated project cost, which include expenses for all fixed assets and other assets which are required to start the operations. It is important that the costs, including provisions for contingencies and escalation are carefully estimated as once the financing plan is structured, it is difficult to again approach the original or new lenders (for equity or loans) and request additional funds. In project financing it is uncommon, unusual and unprofessional to come back to the financiers seeking additional financial assistance after they have been convinced and signed contracts based on presentations of project feasibility studies. Below is a typical project cost estimate that is always the starting point for a financial plan and the determination of the projected profitability of a venture.

	Local	Foreign	Total
FIXED ASSETS			
Vessels			
Machinery			
etc.			
OTHERS			
Prefeasibility			
Finance charges during construction			
Working capital			
Escalation provision			
TOTAL			

Finance and risk

One of the first financial distinctions which needs to be made is related to the question of ownership. Ownership is always associated with the notion of investor and equity investment, which in turn, is associated with the entity (whether public or private) which must ultimately bear the main risks of the project. In general, financial structuring is about two things: the adequate tailoring of debt, and the raising of money, and on how project risks can be shared or shifted. Whatever the structure, ultimately the equity owners must bear the risks others are unwilling to assume.

Institutions are normally willing to bear risks in expectation of compensation (usually interest or profits). The greater the risk, the greater the expected compensation. If we think of risk and compensation as mirror images of one another we are able to visualize a continuum of financial agencies which range from aggressive risk-taking entrepreneurs (seeking substantial equity profits) to bilateral aid donors whose compensation objectives are humanitarian or political rather than commercial. Somewhere between these extremes lie multilateral developmental institutions like the World Bank (WB), the Asian Development Bank (ADB), and other commercial and merchant bankers; and specialized financial service agencies that mobilize funds in the international money centers through a variety of financial instruments.

Risks vary over the life of a project. In addition, the nature of risk changes as a project moves through its feasibility study stage, its implementation/construction, and ultimate operational stage. Although project risks tend to decline or become more controllable as a tuna project enters its operational stage, uncertainties and external forces like above average increase of fuel costs, the disruption of supplies, depression of selling prices or even unexpected climatic change like El Niño (which may bring about changes in the location of fishing grounds) continue to be of major ongoing concern. Thus, it is necessary and useful to distinguish between those risks which are temporarily associated with a particular phase in the fishing project's evolution from those uncertainties which are

likely to continue throughout a project's life. Table 1 below lists a number of typical risk elements facing a Pacific island tuna operation.

Table 1. Financing risks in fishing projects

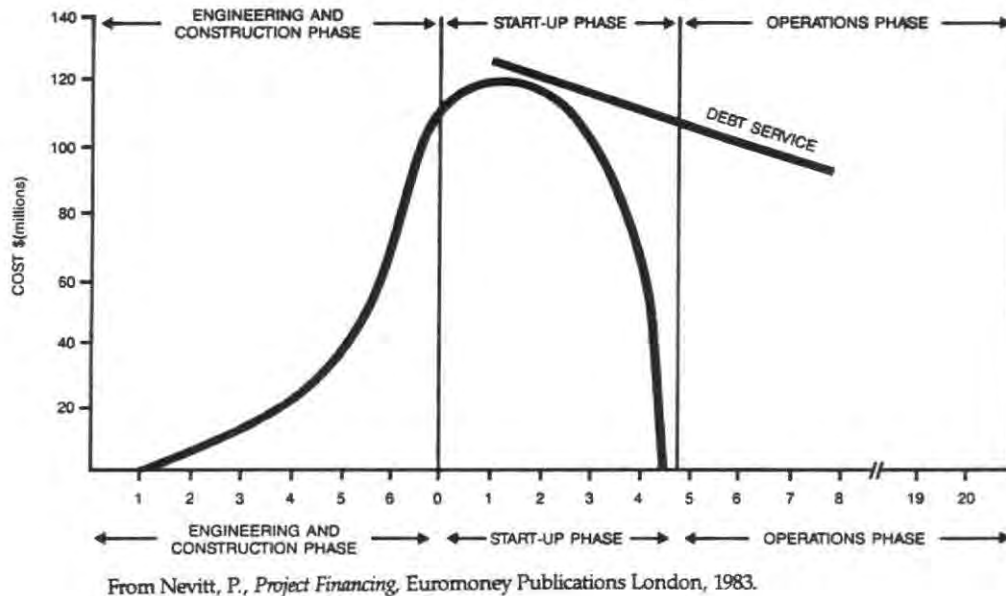
Category	Characterization
Resource risk	Biological yield of fish stock*
Operating risk	
Technical	Can fish be efficiently caught
cost (including fuel)	Is inflation of major costs likely to make operation uneconomic*
Management	Can company manage operation
climatic	Will climate affect fishing ground*
Infrastructure	Will infrastructure meet project needs
Environmental	Will environmental resources like processing water or bait fish be depleted or polluted
Marketing	Can catch be sold at economic price*
Political	Will local/national policies effect economics of project*
Participant	Do participants have common interest or objectives in project
Completion	Will project be completed as planned (time, cost, performance)
Legal	Are legal complications likely to jeopardize project (implementation or operation)

*Denotes ongoing risks

From the above list it is clear that the uncertainties facing any new project during implementation and during operation are considerable. It is for this reason that Clement-Jones¹ argues against majority or 100 percent equity ownership by government in new fishing projects. In our view the same applies for any other form of ownership, say 100 percent privately owned company.

From the point of view of bankers or other non-equity financiers, the relevant risk period is only the period until the debt is fully repaid. Equity owners, on the other hand, must face uncertainty throughout the project's entire life. Figure 1 below graphically depicts the risk stages in the evolution of a fishing project.

Figure 1. Risk phases in a project financing



By combining the information from Table 1 (e.g., Characterization) on the risk profile of Figure 1, a picture of risk elements and their cumulative impact on total risk exposure begins to emerge.

Risk—spreading, sharing, and hedging

Since the total risk which exists with a fishing venture is determined by a number of institutional, market, technical and biological factors it must be considered as fixed or defined (controllable) as possible at any particular moment in time. Risks do exist, and if one party to the project wants to avoid risk then some other party must assume additional risks. The assumption of risk almost always carries a price. This price may be topped in the form of an increase of interest rates, insurance premiums, price discounts, loan guarantees, or a combination of these and other devices.

As we have said before in financing a tuna project, there are two main categories of risks: a "credit risk" which involves the lending of money to a project and an "equity risk" taken by the owners or equity sponsors of the project. Credit risk is conservatively defined by lenders and is often underwritten by mortgages, liens, pledges or other purchases of physical assets associated insurance of the sponsor or project and/or loan guarantees by project owners. However, even a conservative appraisal of

the project and tangible loan security or guarantees is sometimes insufficient to cover project uncertainties. For example, in the last decade the United States and Mexican purse seining industry has been particularly hard hit by bankruptcy and loan defaults. This experience has left a number of commercial banks with bad loans and unsellable repossessed assets, and is undoubtedly affecting the attitude of commercial lenders toward making new loans to the tuna industry. In other words, the credit risk of commercial tuna fishing ventures is currently estimated as quite high.

Empirically, the distinction between credit and equity risk can be fairly accurately defined in terms of the premiums which lenders charge to make more risky loans. Most international commercial lending is based on a reference interest rate (often the London Interbank Offered Rate or LIBOR) plus a risk premium or a spread/margin. Normally, commercial banks are unwilling to lend money at interest rates above LIBOR plus a certain percentage, which if dollar loans, could be up to some 3 percent. The rationale for this reluctance is that risk levels which would justify a higher risk premium than say 3 percent are more properly classified as equity rather than as lender or credit risks. Other hard currency loans bear different cost or spread margins which tend to be nominally considerably higher if local currencies (particularly in high inflation countries) are involved.

In contrast with the variable nature of commercial lending (e.g., interest rates vary up and down during the project life as LIBOR moves up and down) borrowing from multilateral organizations like the WB, International Finance Corp (IFC) and the Asian Development Bank (ADB) is often on a fixed interest rate basis. In itself, a fixed interest rate has the effect of reducing project uncertainty since financing costs can be more precisely and directly calculated before the project is committed. In effect, any lender offering a fixed interest rate is accepting the risk that his cost of money will not exceed the fixed, on-lending rate to the borrower. Of course, unless specified differently in the investment agreements (which is always possible), by taking a fixed rate loan the borrower has to pay the same price, even if money becomes less expensive (e.g., if the interest rate falls).

Sometimes commercial banks will come together in loan syndications where each bank assumes a fraction of the overall loan. In this way the banks are sharing the risk that the loan might not be repaid. On the borrower's side, risk sharing may occur where the partners in a project each agree to guarantee a portion of the project's debt. Such sharing is most common in very large or very risky projects but occurs to one degree or another in almost all financing strategies or structures. The basic idea behind risk sharing is that overall risk exposure is more manageable if composed of a large number of small pieces than if everything rides on a few major obligations or commitments. The wisdom of this portfolio management strategy has been repeatedly verified by empirical studies.

Sources of debt

In this section we examine the major lending sources available to
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Pacific island countries. Since some lenders may be more or less inclined toward fishing projects at a particular period in time, it is not possible to give specific guidance on which lenders to approach first. Indeed, the tactical decisions on how a country should make optimal use of the potential finance available to it should be made within the context of the importance of a particular economic sector or need to the country's overall development strategy. For present purposes five financing sources are considered representative:

1. bilateral aid agencies,
2. multilateral lenders,
3. export and supplier credit institutions,
4. commercial banks, and
5. loans from sponsors or shareholders.

Bilateral aid agencies. Aid funds from bilateral donors at concessionary interest rates are available for a broad range of projects in developing countries. But even when these funds are obtained, they do not represent a substantial portion of the project's financial plan. In other words, funds from bilateral agencies tend to be a marginal contribution, and often funds are tied to specific purposes: e.g., pre-feasibility studies, training of personnel, etc. Historically, many donors have tried to focus on social or infrastructure projects and to avoid lending for commercial activities like tuna fishing. This noncommercial focus has been partly justified on philosophical grounds, but of importance has been the concern over criticism in the host country that aid finance was unfairly competing with commercial financial institutions. This noncommercial orientation may be changing with the current emphasis of many donors on privatization. This has led a number of aid agencies to see their programs as adjuncts or catalysts to commercial financing. Thus, aid project monies might sometimes be favorably considered as part of an expansion of existing vessel fleets, or shore-based operations. One cautionary word however should be made. Irrespective of the motives, bilateral donors are often reluctant to provide funds for projects which directly compete with their domestic industries. In other words, if the distant water fishing industry is to be affected, you could qualify for supportive aid funds but if your project is to replace, it might be difficult to obtain the funds from this source.

Multilateral lenders. The WB with its affiliates is generally accepted as the major "development" institution serving the Third World. In the islands region several countries (Papua New Guinea, Fiji, Western Samoa, Vanuatu, and Solomon Island) are WB members. An even larger number of island countries participate in the lending activities of the ADB which is an equivalent regional financial institution. These multilateral financial institutions make project loans which have to be government guaranteed. For countries with particularly low GNP per capita the WB's International Development Association (IDA) provides soft funds with very long repayment periods and symbolic interest rates. Where private investors are involved, a WB affiliate—the International Finance Corporation (IFC)—may participate as both lender and equity owner. Loans from the WB or the ADB are generally for longer terms (say 12 to 20 years) with a 2--3 year grace

period for first payments of principals) and interest rates are often below commercial levels. However, the appraisal of the projects is detailed and the approval process is lengthy. Also denomination of the loans in foreign currencies is sometimes criticized as carrying substantial currency risk particularly if local components are financed with these funds. Nevertheless, these institutions are often the only possible sources of foreign currency financing for developing countries and they are highly regarded by the international financial community. Their participation is seen as an endorsement of the credit-worthiness of a project as they always very carefully and professionally evaluate the technical, financial and economic viability of a proposed project. Both the ADB and the WB are sometimes willing to provide developing nations with technical assistance grants (ADB) or loan support (WB) for project preparation. In contrast to the tied procurement requirements of many bilateral donor countries, multilateral lenders insist on international competitive bidding procedures (except for IFC where selection of machinery and equipment is entirely determined by the project sponsor).

For Pacific island countries, two other agencies deserve mentioning as they play an increasing role in the islands region: the European Investment Bank (EIB) and the Commonwealth Development Corporation (CDC). The European Investment Bank serves as a financial arm of the European Economic Community (EEC). The EIB has several specialized lending programs which should be investigated in cases where European trade is involved. (For example, EIB financing might be worth exploring in connection with tuna marketing or processing in Italy). A second international financing agency of note is the CDC. This corporation has been quite active in the palm oil and other agricultural activities in Pacific island countries. Although CDC has yet to lend or invest in tuna projects, the organization's mandate is sufficiently broad to permit this sort of participation. A more detailed profile of these agencies is in Appendix 1.

Export and supplies credit institutions. Many industrial countries have export financing agencies which seek, through loan guarantees and subsidized interest rates, to promote national exports. In theory, competition between those agencies is suppose to be controlled under an agreement called the Berne Union but, in fact, competition is often quite intense. Obviously, not all countries having export credit agencies produce suitable fishing vessels or cannery equipment for the tuna industry, so advance research into vessel or equipment sources is necessary. In addition, care must be taken that equipment secured under export credit arrangements is internationally competitive or the benefits of attractive finance terms may be more than offset by needlessly expensive purchase prices. Good procurement and financial advice is particularly useful when dealing with export credit agencies. Appendix 2 contains a list of export credit agencies in the major industrial nations.

Commercial banks. Commercial bank lending to developing countries has been sharply curtailed as a result of the current world debt crisis. Nevertheless, this source of lending continues to be quite important in some regions and for particular types of projects. As previously noted, commercial lending to commercial tuna fishing ventures has had a poor

record in recent years and the major banks are likely to be very cautious—and expensive (in terms of LIBOR plus margin interest rate). Nevertheless, borrowers with sound tuna projects, strong management, and solid sponsor guarantees should be able to find commercial bank finance. Funding from this source will normally cost more and have shorter repayment periods than finance from the previously mentioned sources. Particular attention of the borrower should be paid to negotiation of the best possible terms and conditions; commercial banks have flexibility in determining interest rates.

Loans from sponsors or shareholders. Finally, large natural resource or trading companies are often in a position to "lend" directly to commercial projects in which they have an equity interest. This lending often takes the form of "shareholder loans" and may be as an adjunct to other lending sources. Shareholder lending could be abused and manipulated to circumvent exchange restrictions on repatriated profits or to avoid host government taxation. Since this form of financing is by its nature less-than-arms-length it must be approached with some caution and probably not as a first or preferable financing option.

The financing environment

Understandably, potential financiers are primarily concerned with the economics of the project to be financed. The appraisal of a fishing project will sometimes vary between types of lenders. In many instances the appraisal will address broad aspects of the physical and economic context of the project as well as narrow debt repayment questions. The purpose of such appraisals is to identify as many of the project risks and uncertainties as possible and, wherever feasible, to quantify a range within which project variables may fluctuate.

It is commonly accepted that the broadest appraisals are undertaken by international financial institutions like the WB and IFC. Commercial banks tend to be more narrowly focused in their appraisal procedures although this process is being increasingly expanded as a consequence of the world debt crisis. Bilateral aid funding tends to have the least rigorous appraisal and documentation procedures although where donor funds are tied to procurement of vessels or equipment from the donor's country, additional nonfinancial procedures may be involved.

In the case of bilateral or multilateral funders, lenders are somewhat insulated from political risks by international treaty or agreement. However, commercial lenders are highly sensitive to political risks in developing countries and often differentiate their concerns into two groups: "country risk" and "sovereign risk." Country risk generally refers to the risk that for economic or political reasons the host country will not permit the transfer of currency to overseas lenders to cover interest or principle payment. In contrast, sovereign risk refers to projects where the government (e.g., the sovereign nation) is an equity participant or sponsor. In addition, commercial bankers are also concerned with the risk that the host government might nationalize the fishing venture or with the prospect that political instability may interfere with

the commercial operation of the fishing or cannery project. Needless to say, the appraisal of such broad political and economic concerns is hardly a precise science and although many attempts have been made to quantify such risks, the task remains fairly subjective. For this reason, commercial lenders often are attracted by arrangements which link their lending to broader international political arrangements and treaties.

International mechanisms for encouraging risk taking by lenders and investors

As international financing has grown in recent decades, lenders and investors have increasingly sought mechanisms through which risk exposure might be managed. This need to overcome certain types of risk uncertainties was also perceived as a barrier to increased private sector involvement in developing countries by the industrial world and by multilateral institutions. In this section we shall try to examine three such mechanisms and see how they might be used in putting together a financing package for a Pacific island country tuna fishing project.

The cofinancing of a project implies the linking of funding from several types of financial agencies in a complimentary fashion. Often this linking involves the merging of finance from several of the following sources (bilateral aid agencies, export credit, multilateral banks, and commercial banks) through parallel lending to the project. Since each financial agency has its own lending priorities and restrictions, cofinancing must be specifically tailored to the needs of the fishing project and the participation of individual donors. A hypothetical, but not unlikely, cofinancing scheme for a fish harvesting-cannery operation might involve an export credit agency financing the purchase of the fishing fleet, with the cannery development using commercial bank credits and multilateral (or bilateral) funding of shore-base infrastructure such as the wharf and power supply. Of course, sources and uses may vary, particularly if private sector is involved.

The attractiveness of such cofinancing schemes is twofold. First, since each participant is picking up only a share of the overall financing, it is sometimes possible to obtain attractive overall interest, repayment term,² and procurement conditions without preempting finance which might be needed for other purposes. Secondly, lenders take comfort in participating in such a broad scheme since they will recognize that unfavorable policies by the host government will have potentially far reaching consequences. Very often the multilateral lender will act as a collection agent for other cofinancers. Table 2 summarizes recent cofinancing activities of the WB. The IFC has been also very active in arranging cofinancing and participation schemes.

Cofinancing is often associated with another risk sharing mechanism, cross default provisions. Cross default provisions are an agreement between lenders that if one project loan is in default, all other loans are considered to be in default. The obvious attractiveness of such provisions to lenders is that it contractually assures that the borrower will suffer the broadest possible consequences of any repayment default.

Table 2. World Bank cofinancing operations, 1975-84 (billions of dollars, unless otherwise noted)

Fiscal year	Number of projects with cofinancing	Cofinanciers' contribution				Bank contribution		Total project costs
		Commercial banks	Export credit agencies	Other official sources	Total	IBRD	IDA	
1975	51	0.1	1.0	0.9	1.9	1.0	0.3	8.8
1976	67	0.3	0.9	1.1	2.2	1.6	0.4	9.6
1977	78	0.7	0.2	1.5	2.4	1.9	0.7	10.0
1978	79	0.2	0.5	1.8	2.5	1.7	0.8	11.4
1979	105	0.5	0.3	2.0	2.8	3.0	1.1	13.3
1980	86	1.7	1.6	2.6	5.9	3.0	1.6	20.3
1981	72	1.1	0.5	1.5	3.1	2.6	1.5	15.1
1982	98	1.2	1.8	2.2	5.3	4.1	1.2	20.0
1983	84	1.1	3.0	1.8	5.7	3.3	1.1	20.8
1984	98	1.1	0.9	2.0	4.0	4.6	1.3	21.7

Source: World Bank Development Report 1985, page 123.

Note: Components may not add to totals because of rounding. These amounts represent private cofinancing as reflected in the financing plans at the time of Board approval of A loans. They do not represent private cofinancing loans actually signed in the fiscal year. An analysis of cofinancing operations can also be found in World Bank Annual Reports.

In the case where cross default provisions exist between commercial and other lenders (for example between a commercial bank and the WB) the project sponsors, including the government, would face default consequences which have a substantially magnified impact and might extend well beyond the borrowing project. Such magnified default consequences are the result of the international status of multilateral financial institutions and their position in world financial affairs. Such arrangements might in some way loosely be considered as political risk hedging.

Cross default provisions might be disadvantageous where developing country governments are direct project participants. On the other hand, if they provide sufficient lender comfort to make possible the financing of a fishing project which otherwise would require increased cash contribution from the government, then they may be worthwhile. Here it is worth keeping in mind that the acceptability of such mechanisms ultimately turns on how attractive the fishing project appears. A marginal venture with a low debt service ratio whose major justification is secondary economic benefits, is probably better financed in a manner which avoids the necessity for cross default provisions.

In much the same way that cross default provisions seek to minimize lender concerns with political risk, investors from industrial countries can often directly purchase investment insurance. Normally, such political

insurance covers three types of investor risks:

- . expropriation,
- . an inability to convert local currency, and
- . political violence (e.g., civil war, revolution, etc.).

In exchange for insurance covered by a quasi-public agency of the host government, investors normally pay an insurance premium. In recent years the extent of the risks covered under these quasi-public investment insurance schemes has been gradually expanding. A list of agencies in the industrial nations which provide such political risk insurance is included in Appendix 3.

Such investment insurance has obvious application to the structuring of foreign equity holdings in Pacific island tuna ventures. However, issuance of the insurance is dependent upon the existence of a comprehensive agreement between the host government and the foreign insurance agency. Although some Pacific island countries are signatories to a large number of such agreements, other island countries have been slow to endorse such arrangements. While such arrangements may imply some limitations on national sovereignty, the mere existence (or lack of existence) of such an agreement sends a positive signal to prospective investors.

In early 1981, discussions began within the WB about establishment of a Multilateral Investment Guarantee Agency (MIGA). These discussions led to formulation of concrete proposals which were presented in 1985 and resulted in an international convention which came into effect in mid-1986. MIGA is legally and financially separate from the WB and will offer coverage to investors from member countries. Four categories of noncommercial risk will be covered: the transfer risk resulting from host government restrictions on conversion and transfer; the risk of loss resulting from legislative or administrative action or omission of the host government; the risk resulting from the repudiation of a contract by the host government; and the risk of war and civil disturbance.

RAISING THE FUNDS (DIRECT AND/OR EQUITY)

Having surveyed the range of funding sources and the general concern with financial risk it is now useful to turn to more specific issues. In this section we shall focus on the sources and terms of finance which might be available for vessels, shore-base, or a tuna cannery. In the discussion it is assumed that the government has direct policy interest in the financial structure of a proposed project irrespective of whether it takes a direct equity ownership position in the project. This interest derives principally from the government's role as tax collector and foreign exchange manager. Obviously, where a government is directly involved as an equity owner its policy concerns will increase.

Looking for money—the prerequisites

Before approaching any prospective financier, a thorough feasibility study of the proposed venture must be undertaken. In most instances suitable feasibility studies are beyond the capability of the host government (and sometimes project sponsors), and will involve contracting with an outside consultant firm. However, occasionally if the funding is going to be provided by a concessionary foreign aid donor, assistance in the feasibility study can be obtained directly from the donor or through an agency like the United Nations (UNIDO, UNDP, etc). If commercial or multilateral funding is to be sought, then the consultant should have international experience and reputation. Indeed, it is often useful to start the consultant identification process by approaching commercial banks or multilateral financial institutions for a short list of reputable firms. In this way, the credibility and the reliability of the resultant feasibility study is likely to be increased.

The heart of any feasibility study (which is to evaluate all possible alternatives for project implementation), is the cash flow analysis of the project in which a range of technical, marketing, financial, and taxation questions are quantified. While the government for its own purposes may also desire to undertake a broad economic assessment of the project, lending decisions are almost always taken on a much narrower financial analysis. Both financial analysis and economic analysis techniques enjoy a rich descriptive literature which is far too extensive to be considered here. However, key distinctions and important concepts are included in Appendix 4.

In focusing on the estimates and rationale crystallized in the cash flow analysis it is easy to lose sight of the myriad assumptions which lie just below the surface. Collectively, these assumptions form that basic risk parameters of the project and a good lender appraisal will carefully probe the major risk exposures. In general, the greater the lending risk assumed by the lender, the more complete, thorough, and convincing the feasibility must be.

Nevitt presents a comprehensive picture of typical lender appraisal questions (Table 3). These questions must be addressed by the feasibility

study and ideally should be specified in the projects manager's or consultant's terms of reference.

Table 3. Criteria for project financing

Assuring the cost of supplies and raw materials
Energy supplies at a reasonable cost assured
A market exists for the project, commodity, or service
Transportation of product to market
Adequate communications
Availability of building materials
Experienced and reliable contractor
Experienced and reliable operator
Management personnel
No new technology
Contractual agreements among joint venture partners
Political environment, licenses, and permits
No risk expropriation
Country risk
Sovereign risk
Currency and foreign exchange risk
Adequate equity contribution
The project as collateral
Satisfactory appraisals
Adequate insurance coverage
Force majeure risk
Cost over-run risk
 a. Additional capital by sponsor
 b. Standby credit facility
 c. Fixed-price contract
 d. Completion guarantee extension to debt maturity
 e. Take out of lenders
 f. Sponsors' escrow funds for completion
Delay risk
Adequate ROE, ROI, and ROA
Inflation risk
Realistic interest rates projections

Source: Nevitt, P. 1985. Project Financing, Euromoney Publication.
London. pp 9-20.

For tuna ventures the greatest project uncertainties have historically related to the cost of fuel and to the market price of the catch.³ It is to be expected that any lender appraisal will pay particular attention to these topics. In addition, for many Pacific island countries, assumptions about the cost and productivity of the shore-base or cannery labor force will be carefully scrutinized by financiers. Since the cannery operations in American Samoa are the oldest and most profitable tuna operations in the islands region it is inevitable that lenders will use these operations as a guide in their appraisal review. Other papers in this series examine the economics of tuna operations and can be used as a general guide. In

Appendix 5, the table of contents for two fishing project appraisals are presented to suggest the major topics which need to be addressed in feasibility studies or for loan applications.

Assuming that the feasibility study and resultant cash flow analysis has been adequately prepared, the lender will evaluate the project based on a range of financial ratios and on an assessment of the riskiness of the proposal, country, industry, etc. In this assessment the experience of the lending institution, both with the industry and with the particular borrower is likely to play a significant role.

Where finance is being sought from a multilateral source like the ADB or the WB, the appraisal process is likely to be quite lengthy and will involve the visit of several appraisal missions. Since multilateral lenders do not, as a rule, lend to commercial ventures (the WB's IFC is an exception) money from these sources will often be directed at associated (cofinanced) infrastructure and may be linked (through cross default) to other financial sources. Invariably, such integrated financial arrangements will consume additional time, but they will assure the local sponsors—via an independent highly professional approval process—of the project's viability. Moreover the process will insure that the project is adequately structured and credit-worthy.

Bilateral donors are usually less rigorous in their project appraisal but are seldom any faster. Again, the noncommercial policies of aid agencies mean that different elements of the project will have to be simultaneously processed through parallel funding agencies. Export credit agencies, although more attentive to the financial risks of a project, will share with aid agencies a home country bias toward the project. This bias will be concerned with questions such as the importance of the project to the home country market, the provision of capital goods (vessels, machinery, etc.), or construction services to the project, or the strengthening of trade ties between the two countries.

Such nonfinancial lending objectives, when combined with government loan guarantees and a less rigorous loan appraisal, can lead to a lending environment which encourages marginal projects that otherwise would be rejected on purely commercial grounds. There is nothing wrong with noncommercial development projects undertaken on broad social and development grounds...so long as the inherent risks and potential ongoing subsidy requirements are clearly recognized and politically accepted.

Finally, shareholder loans to the fishing project may occur expeditiously and with minimal appraisal since a parent company is simply lending to its own subsidiary. Such shareholder loans are often made to offset cost overruns and sometimes in lieu of a contingent liability such as a loan guarantee. As previously noted, the interest on such shareholder loan is normally tax deductible in the host country, and may also enjoy exemption from certain foreign exchange restrictions.

Terms and conditions

The interest rate charged to a fishing loan will be dependent on the

type of lender, the risk assessment of the project, the loan security, and the lender's cost of money. Mention has already been made of commercial loans which are, if coming from foreign sources, often pegged to LIBOR. The cost for such loans vary throughout their life as LIBOR varies with changing conditions in the money markets. In contrast, some multilateral lending together with repayable foreign aid credits are made on a fixed interest rate basis.

Figure 2 and 3 presents interest rate and loan maturity data on recent commercial loans made to developing versus all borrowing countries.

Figure 2. Average spreads

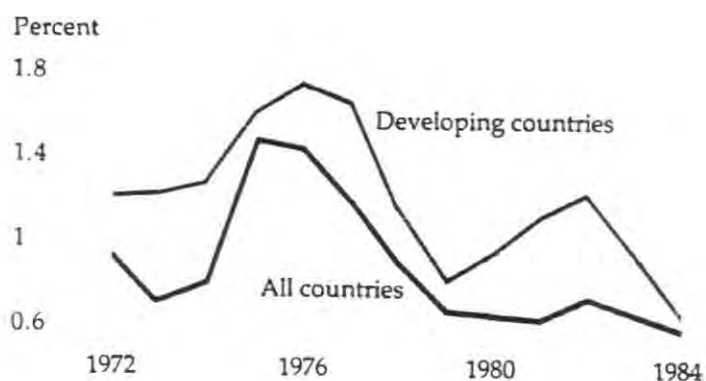
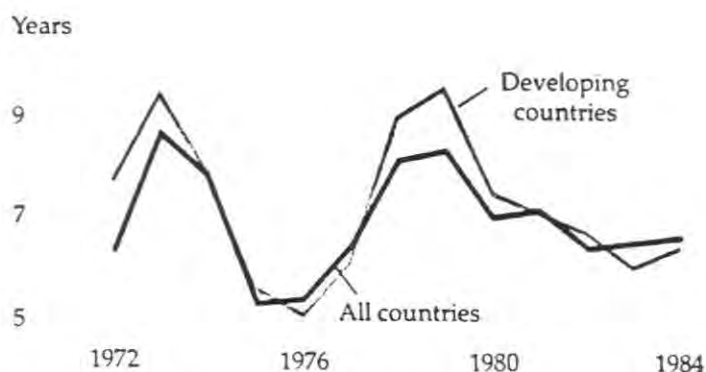


Figure 3. Average maturities



Note: Data are for new publicized syndicated loans.

Source: Bond 1985.

Due to the wide differences in the credit-worthiness of developing countries and the fact that not all countries borrow every year, the spread differential fluctuates significantly from year to year. Nevertheless, it is evident from Figure 2 and Figure 3 that developing countries as a group, generally borrow from commercial sources at higher interest rates but have roughly comparable repayment periods.

The disadvantageous terms of developing country borrowers in seeking commercial sources of debt is partly offset by their access to funds from multilateral development institutions. In general, loans from such institutions are available at interest rates which may be below commercial rates. In addition, designated low-income countries are eligible for highly concessionary WB credits from the IDA. Pacific island countries qualifying for IDA concessionary finance include the Solomon Islands, Vanuatu, and Western Samoa.

A particularly attractive feature of the WB and the ADB lending is the longer maturities over which the loans are repayable. These loans normally carry up to a 6 year grace period with a repayment schedule extending for some 10—15 years thereafter (up to 20 years total from the approval date) for WB loans and a 50-year total for IDA credits. IFC, which is also trying to provide up to some 15—20 percent of equity (while not taking direct participation in the management of a company), grants loans with repayment periods up to 10—12 years including a 1—2 year grace period from project completion. Such lengthened repayment schedules are extremely important in indebted fishing ventures where substantial annual variations in revenues are to be expected and the heavy debt burden associated with short-loan maturities increases the likelihood of cash flow problems.

Export credit agencies provide debt finance which is intermediate between commercial and multilateral lenders. These institutions normally offer interest rates below commercial levels which sometimes approach or are lower than the interest rates charged by the WB's IFC. On the other hand, the usual loan maturity is likely to be 8-10 years which, although longer than commercial terms, is not as attractive as the 15—20 years offered by the WB.

Export credit agencies make fixed interest rate loans in their home currency. Occasionally, where a project does not generate revenue in the currency needed to repay the loan a currency or foreign exchange risk is created. In addition, care must be taken that the substantial advantages of export financing are not offset by overly expensive or inappropriate processing equipment or fishing vessels. In this regard it is important that the feasibility study be in sufficient depth to identify procurement sources for major capital imports to the project. Finally, the organizing of export credits is often a lengthy and tedious process which, in extreme cases, may delay a project. Nevertheless, the terms offered by these agencies are sufficiently attractive to warrant careful consideration by Pacific countries.

Shareholder loans may sometimes be used as a substitute for direct equity contributions or investor guarantees. While the hazards of this type of debt finance have previously been noted, it is necessary to say something about likely terms and conditions. Shareholder loans are often

mandated by some contingency condition like a major cost overrun or project delay. When loans are made for such purposes they are likely to be subordinate in the project's "senior debt" raised from other financial sources.

In addition to project shareholders, subordinated debt may also be provided by a equipment suppliers or product purchasers. While each of these lenders may have different objectives they are likely to seek the shortest repayment period which is consistent with the structure of the senior debt of the project. While shareholder loans may sometimes carry attractive (below commercial) interest rates, subordinated credits from other lenders are likely to be at or near the rates charged by commercial institutions. One of the advantages of international financial institutions' participation in a project is that it is often more likely that other partners or lenders will decide to participate.

The nature of tuna fishing as viewed by lenders

Tuna fishing is a rather uncertain business. The catch is under the sea and is therefore only partly controllable. Financing experience in recent years has not been good and it appears that some sectors of the market are unlikely to see even moderate expansion over the medium-term. In addition, any new cannery in the Pacific island region should be internationally competitive. As a commercial venture, tuna fishing for the high-volume cannery market is considered as a high-risk, low-reward business.

On the other hand, for many Pacific island countries, tuna is the largest natural resource and a major developmental opportunity. For these reasons, the harvesting and processing of tuna cannot, and should not, be ignored. In addition, Pacific island countries, do have a competitive advantage in this sector. Within this setting, projects should be encouraged but the selection of a financial structure needs to be carefully considered if viable operations are to survive over the long-term.

Traditionally, tuna finance has made heavy use of debt finance (in financial jargon, it has been heavily leveraged). This leveraging means that both fishing and processing ventures must face substantial annual costs irregardless of catch rates, product prices, or fluctuations in such expenses as fuel. The obvious strategy under such circumstances is to,

- . decrease the amount of debt leveraging by increasing owner's equity,
- . decrease annual debt service requirements by seeking long-term, low-interest loans, and/or
- . accepting the need for some sort of government subsidization.

Since the availability of equity or subsidization funds is determined by external commercial or developmental policy, the key financial question to be addressed here is the structure of the debt service obligations of fishing ventures.

To illustrate the importance of the terms of debt financing to the tuna industry an analysis was made of the cost structure of the U.S. purse seine industry using the most current estimates available.⁴ This data is presented in Table 4 for 1985 for selected operational cost items.

Table 4. Cost structure of U.S. tuna purse seine fleet in 1985

	US\$,000	Total cost (%)
Crew costs	621	18.9
Fuel costs	533	16.3
Repairs	261	8.0
Insurance	267	8.1
Vessel capital charges*	910	27.8
Other costs	687	29.9
Total	3.279	100.0

*Based on US\$4.5 million vessel commercially financed at 10.5% over 7—years.

Table 5 demonstrates the effect of the interest rate and loan maturity on an annual capital payments. The matrix show the combined effects of commercial interest rate and terms (7 years) versus interest and terms for a typical export credit loan (commercial -0.75 percent 10 years) and a WB loan (commercial -1.5 percent 17 years).

Table 5. Effect of financing terms on purse seine vessel costs (expressed in percent of annual mortgage charge)

	7 years	10 years (Percent)	17 years
Commercial	Base	-4.0	-25.1
Commercial -0.75 percent	-2.4	-7.0	-29.5
Commercial -1.5 percent	-4.8	-10.0	-31.8

Assumes vessel cost of US\$4.5 million with commercial rate of 10.5 percent.

To put these figures in some perspective, the U.S. Trade Commission financial survey estimated that over the period 1979-85, the average U.S. purse seiner lost about US\$347,000 per year. The effect of a longer mortgage repayment period would have reduced this annual loss by 85 percent (at concessionary interest rates such as those offered by multilateral lenders).

Again, it should be noted that since the WB does not finance private ventures, such attractive loan terms would probably not be available for the purchase of tuna vessels in the Pacific islands. Nevertheless, the

above example does demonstrate the substantial impact which favorable loan terms may have on tuna fishing economics.

To the degree that the overall venture could be structured to permit participation of say, export credit finance for purely commercial activities and multilateral finance for associated infrastructure expenditures, a fairly robust financial structure would be created. In addition, such a venture might advantageously use debt and equity funds from other the WB affiliate—the IFC already discussed.

This blending of equity funds (to reduce overall fixed capital charges) with debt raised from a variety of sources on different terms is an essential ingredient in project viability. It is particularly important in industries like tuna fishing and processing where product prices and important input costs like fuel are highly volatile. A key ingredient in successful financing is to strike a balance between the amount of fixed debt a project can carry (debt leveraging) and the terms under which that debt is obtained (e.g., interest rates and loan maturities). There is no simple formula to apply here, but recent experience in the U.S. and Mexican tuna industries clearly shows the disastrous consequences of financial structures with short loan maturities and relatively high interest rate margins.

Risk and project collapse

The bankruptcy of a major natural resource project in a small country can be a traumatic occurrence. Often, governments put their political prestige behind highly visible development initiatives and, for this reason, feel compelled to continue to support clearly uneconomic ventures. In the developing world, the most visible examples of this national prestige phenomena is the endless subsidization and restructuring of national airlines. But beyond such nationalistic concerns lies substantive issues involving the loss of employment, inappropriate allocation of government services or infrastructure, and a reduction in secondary or support industries.

In contrast to the broad political and economic consequences of a collapsed project, the financial costs can be readily quantified. Who will bear these financial costs is, of course, directly related to the sharing of risks which is implicit to the financial structure of the project. For heavily debt leveraged projects, assets may be seized by senior creditors and sold to offset outstanding loans. If assets are inadequate or where contractual arrangements make provision for contingent liabilities, creditors may seek to recover funds from various loan guarantors. With multilateral lenders, who only provide funds to governments the ultimate loan guarantor of government borrowed funds is the national tax base. In purely private ventures, lenders may seek recourse to the parent company.

Investors seeking to undertake natural resource projects in Pacific island countries often seek several types of financial concessions from the host government. In many cases, the intention behind such negotiating positions is not immediately clear nor quantifiable. Typical investor

financial concessions include:

- . tax relief measures,
- . provision of infrastructure,
- . loan guarantees by government, and
- . access, through government, to concessionary financial sources.

With the exception of fiscal concessions relating to tax or tariff relief, most financial concessions directly increase the government's risk exposure and make it more vulnerable to the demands of creditors in the event of project collapse. On the other hand, as we have seen the longer loan maturities and concessionary interest rates available through the government can play an important role in the viability of the fishing project. Thus, increased government involvement, particularly in the first years of project operations, simultaneously increases risk exposure and decreases the project's vulnerability to short-term market or cost uncertainty. Government incentives should be considered as an important vehicle to encourage project sponsors to start the venture.

In balancing the pluses and minuses of financial risk it is often easier to consider loan guarantee arrangements than direct borrowing by government. This trade-off may be deceptive and needs to be carefully evaluated. While it may sometimes be possible to obtain concessions on loan terms with a government guarantee, the usual circumstance is that such concessions are unlikely to be as significant as those which the government itself could directly obtain. Too often, the government simply ends up guaranteeing risk that the investor would otherwise have borne, without a measurable impact on the vulnerability of the fishing project.

Of course, if all goes well with the fishing venture, all of this discussion of risk exposure and default liability is academic. But projects do not always turn out as planned and loan agreements are primarily designed to deal with liability conditions when projects fail. In the hope and euphoria of a promising new fishing proposal, it is difficult to keep such pessimistic conditions in mind.

CONCLUSION

The financing of a tuna fishing or processing venture is a major and complex undertaking for any individual sponsor or a group. For Pacific island countries whose main developmental potential may be their marine resources, this financial undertaking takes on added significance. Determining an appropriate capital structure, an optimal financial strategy, and funding, is an important ingredient in achieving a successful tuna venture.

Each participant brings his own objectives and concerns to financial decision making and inevitably some of these objectives are in conflict. Nonetheless they have to be "watched" or coordinated throughout the life cycle of a project. Many of those objectives deal with risk: how to spread it, how to shift it, how to reward it, and if all else fails, how to manage it and to absorb it. The host government is often the least sophisticated risk manager in the venture and its need or desire to mount a high visibility, employment providing and particularly profitable activity may lead it to assume a disproportionate share of the projects inherent financial, technical and economic uncertainties.

While good financial planning can substantially add to the likelihood that a tuna operation will succeed, it can never substitute for the fundamental prerequisites of the project. These prerequisites are:

- strong management with demonstrated competence and experience in the technical or sector area (fishing, canning) and financial/marketing area, with (if necessary) a strong technical or market partner from abroad,
- a realistic initial assessment of revenues, capital requirements, and operating costs, demonstrating financial (from the point of the company) and economic (from countries' point of view) viability, with particular attention being paid to international competitiveness,
- access to good and proven fishing grounds and to tuna markets and, where necessary, the ability to organize food distribution networks for canned tuna or petfood, or to acquire strong marketing expertise from abroad, and
- utilization of modern, proven technology which is cost effective, combined with skilled labor, particularly in fishing, with an efficient reward system.

Without fundamentally strong project prerequisites, and an economically accessible natural tuna resource, the best financial wizardry from either company's staff or outside entrance in the world when putting together an operation or when already running it will be of little use.

APPENDIX 1.⁵

THE EUROPEAN INVESTMENT BANK AND COMMONWEALTH DEVELOPMENT CORPORATION

EUROPEAN INVESTMENT BANK

Salient Characteristics:

- EIB encourages the development of industries appropriate for local markets. They do not place primary emphasis on development of export businesses.
- EIB lends money from its own resources at subsidized rates and administers funds for loans at concessionary rates for the European Development Fund (EDF). These loans for risk capital formation are included in what the EIB calls its Special Section.
- EIB does not depend on participation by a company in the European Economic Community (EEC) nor does it require the purchase of goods produced in the EEC.
- EIB lends extensively to development banks in the Third World as part of its support for smaller companies.

Purpose

The EIB's purpose in developing countries is to help many countries closely intertwined with Europe, with a shared past and close cultural links, to grapple with basic obstacles to achieving better living standards for their peoples and to reduce tensions and strengthen the chances for equilibrium in these countries.

Funding Policies

Finance can be provided for investment carried out by public, semi-public or private sector promoters, but in all cases the EIB deals only with finance proposals presented either by the authorities or with their agreement, and these must be for specific projects. The EIB only finances part of the projects' fixed costs—up to 50 percent (the average in 1982 was slightly less than one-third). It frequently lends in conjunction with other aid agencies.

The EIB makes funds available under two broad headings: ordinary operations and special operations. Ordinary operations are loans from the Bank's own resources, but with the lending rates reduced, in most cases, by interest subsidies paid from EEC budgetary funds. Borrowers therefore receive loans on substantially more attractive terms than the EIB itself could afford to give, bearing in mind it has to raise its funds by offering competitive rates on the capital markets.

The Special Section operations represent a particularly valuable form of aid in the African, Caribbean, and Pacific countries (ACP) where industrial development is almost invariably faced with special problems, and where the general economic situation, particularly in the least developed of them, calls for a substantial measure of financial support along flexible lines. The finance does not have to reflect the harder realities of the capital markets and is invariably provided on highly concessionary terms.

Risk capital operations included in the Special Section can take the form of quasi-capital assistance to a government or a national development institution to enable it to take a stake in an enterprise (which can then lead to the firm contracting loans on the strength of its improved capital base); a direct participation on the EEC's behalf (holdings are kept only as long as strictly necessary for a project's success, and then afterward transferred, normally to interest in the ACP country concerned); subordinated loans, repayable after other priority debts have been reimbursed; conditional loans with repayment linked to fulfillment of conditions which indicate that the project has reached a certain level of profitability; and finance for preinvestment studies.

The EIB works in close cooperation with member states bilateral aid organizations, other international lenders, in particular the WB group, and more recently the various bilateral or multilateral financial institutions in the Arab oil-producing countries. These contracts often help in the identification of possible projects for financing and in easing the complicated business of constructing financing plans for a number of larger projects. Co-financing has been particularly important in the ACP countries. Under the first Lomé Convention, over 45 projects benefited from co-financing arrangements. Their estimated cost was nearly 2.5 billion European Currency Units (ECUs). Co-financing by the EIB and partners covered 1.1 billion or 48 percent of the total outlay, of which 330 million ECUs (13 percent) were from the Bank's own resources as well as from budgetary funds it handles. A similar pattern emerged from the lending operations financed under the Second Lomé Convention.

Lending is not tied to purchases from certain suppliers. Equipment and services must be chosen by the needs of the project uppermost. Broadly speaking, the EIB requires appropriate forms of competitive bidding (national or international invitations to tender or consultation) where amounts involved are fairly substantial. EIB finance may be used for goods or services supplied from firms based in the countries where the Bank borrows funds, or in other countries if, in the Bank's opinion, particular technical or other benefits for the project are involved.

The EIB makes its loans conditional upon the granting of guaranty by the government of the country in which the project is to be enacted or by some other equally acceptable security.

Rates and conditions

EIB manages its own funds and its treasury operations to generate surpluses which are used to build up reserves. This policy leaves the EIB

free to set interest rates on its own loans at a rate which just covers its own costs, thus fulfilling its statutory duty to work on a non-profit basis. Recently, the margin has been in the order of 0.15 percent over the cost to the Bank of replacing the funds disbursed in a given loan. The EIB is not tied to any one currency or market and is in any case required by its statute to run no currency risk. It disburses loans in the currencies it raises and the borrowers have to repay the principal and interest in the currencies they receive.

Repayments are eased through use of part of the EDF grant aid to subsidize interest rates. In principle, the subsidy should be 3 percent, but an overriding clause limits the net rate to a maximum of 8 percent. In recent times of high interest rates, this ceiling has been of substantial benefit to borrowers. No subsidy, however, can be claimed for loans advanced to fund oil sector investment.

Adequate security has to be obtained for EIB loans. Security is assured through a triple approach. The Bank's own appraisal of each project looks to supporting only soundly conceived investments, and this is coupled with procedures it adopts to monitor implementation. Contractual security arrangements are made for each individual loan agreement, usually in the form of a guaranty from the State concerned, or banks or industrial groups in appropriate circumstances. In practice this means that about 90 percent of its loan carry the guaranty of a state or a public institution. In the relatively few cases where the EIB has given its own guaranty on finance provided for projects in third parties, it has itself taken appropriate counter-guaranties. Beyond this, the EEC itself stands as guarantor for the EIB's lending outside the EEC by giving blanket guaranties covering 75 percent of lending both in the Mediterranean and Lome Convention countries.

Sectoral distribution

The EIB concentrates on fields appropriate for the kinds of loan finance which it deploys: industry, agro-industry, mining, energy, tourism, major agricultural improvement schemes, and economic infrastructure such as railway or port development, the emphasis varying from country to country.

At the end of 1983, 55.8 percent of EIB financing contracted under the Lome Conventions since 1976 was for industry (including 16.1 percent for agro-industry and 14.4 percent for mining), 31.4 percent for energy (primarily for the development of thermal and hydroelectric power stations), 6.1 percent for transport and telecommunications, 2.9 percent for hotels and tourism, 2 percent for development finance companies, 1.7 percent for pre-investment studies, and 0.1 percent for agriculture. In 1983 itself, 56.5 percent of funds went to the industrial sector, 20 percent for the energy, 18 percent for telecommunications, 2 percent for transport and infrastructure, and 3.5 percent for feasibility studies.

COMMONWEALTH DEVELOPMENT CORPORATION

Salient Characteristics

- . CDC can either loan or invest money in development projects overseas, some of which it wholly owns.
- . CDC sometimes grants loans at concessionary rates.
- . CDC has the power to borrow funds on the capital markets.
- . CDC maintains a commitment to operate in the poorer developing countries and specializes in the development of natural resources.
- . CDC maintains a large overseas staff.
- . CDC's primary area of operations are the Commonwealth countries.

Purpose

The task of the CDC is to assist overseas countries in developing their economies by investing its funds in viable projects that will help to increase the wealth of recipient countries and yield an economic return on the money invested. CDC must by statute pay its way, including service of the capital provided by the British government and others. It is not an aid-giving institution and has no grant funds, but it can offer loans rates below those of the IFC and the WB for projects which are deemed to have special economic value.

Funding policies

CDC has investments in wholly owned projects and investments in the form of shares, debentures and loan capital in subsidiary and associated companies; it also makes loans to statutory bodies. Its investments are usually accompanied by loans and are typically in the range of 15 percent to 30 percent of a project's total requirements. Only rarely does the CDC assume full ownership.

The keynote of its investment policy is flexibility. It particularly favors joint companies with local partners and capital and often invests in partnerships with agencies of other governments, with international financing institutions, with commercial, industrial, and agricultural concerns, and with private partners from many countries. Over one-third of the 29 new commitments it undertook in 1983 were developed with the WB or its affiliates, the IDA and the IFC. Eight were in association with one or more members of Interact, the formal group of public institutions of the EEC countries concerned with investment in the developing world. Over 40 percent of the new commitments made in 1983 involved private enterprise, and of these projects half were sponsored by companies in the United Kingdom

private sector. CDC's funds are not tied to offshore purchases, but may be used for local costs.

Requirements for funding

To qualify for consideration by the CDC, a project must:

- . be within CDC's statutory terms of reference,
- . have good development value for the country concerned, and the approval of that country's government,
- . be shown to have good prospects of commercial viability,
- . have management of high caliber, either provided or procured by the sponsors,
- . maintain an internal rate of return of about 10 percent and a debt coverage ratio of 1.5 to 2 percent. However, the CDC has no set standard for the rate of return and sets interest rates depending on the ability of the project to pay. Experience has shown that it is very difficult to estimate the return on agricultural projects.

Special activities—the development of natural resources

Since 1975, the CDC's investment policy has become more closely harmonized with general United Kingdom aid policy, in particular as concerns the poorer countries and the emphasis on renewable natural resources. In 1981, the Corporation expressed its intention to invest not less than half its new commitments in renewable natural resources. It prides itself of possessing "the special skills" necessary to pursue these investment wisely. In 1983, the CDC had commitments to 101 agricultural projects, for one-fifth of which it supplied corporate management responsibility. In view of the scale of its involvement in agriculture overseas, CDC maintains contact with many branches of British agriculture, including those industries supplying the needs of its projects.

APPENDIX 2.

THE BERNE UNION

Australia	Export Finance and Insurance Corporation (EFIC)
Austria	Oesterreichische Kontrollbank Aktiengesellschaft (OKB)
Belgium	Office National du Ducroire Creditexport
Brazil	Carteira de Comercio Exterior-Banco do Brasil S/A (CACEX) Instituto de Resseguros do Brasil (IRB)
Canada	Export Development Corporation (EDC)
China (Taiwan)	The Export-Import Bank of China
Denmark	Eksportkreditradet (EKR) Dansk Eksportfinansieringsfond (EF)
France	Compagnie Francaise d'Assurance pour le Commerce Exterieur (COFACE) Banque Francaise du Commerce Extérieur (BFCE)
Germany	Hermes Kreditversicherungs AG Ausfuhrkredit-Gesellschaft mbH (AKA) Kreditanstalt fur Wiederaufbau (KfW)
Italy	Sezione Speciale per l'Assicurazione del Credito all' Esportazione (SACE) Mediocredito Centrale
Japan	Export-Import Bank of Japan Ministry of International Trade and Industry (MITI)
Korea	Export-Import Bank of Korea
Netherlands	Nederlandsche Credietverzekering Maatschappij (NCM) De Nederlandsche Bank (DNB)
New Zealand	Export Guarantee Office (EXGO)
South Africa	Industrial Development Corporation of Africa Limited (ICID)
Spain	Compañia Española de Seguros de Crédito a la Exportación (CESCE)
Sweden	Exportkreditnämnden (EKN) AB Svenska Export Kredit (SEK)
Switzerland	Exportrisikogarantie (ERG)

United Kingdom	Export Credits Guarantee Department (ECGD)
United States	Export-Import Bank of the United States Private Export Funding Corporation (PEFCO) Overseas Private Investment Corporation (OPIC)

APPENDIX 3.

GOVERNMENT AGENCIES PROVIDING POLITICAL RISK INSURANCE

Australia	Export Finance and Insurance Corporation	EFIC
Austria	Osterreichische Kontrollbank AG	OKB
Belgium	Office National du Ducroire	OND
Canada	Export Development Corporation	EDC
France	Compagnie Francaise d'Assurance pour le Commerce Extérieur Banque Francaise du Commerce Extérieur	COFACE BFCE
Federal Republic of Germany	Treuarbeit Aktiengesellschaft	TREUARBEIT
India	Export Credit & Guarantee Corporation Limited	EOGC
Israel	The Israel Foreign Trade Risk Insurance Corporation Limited	IFTRIC
Japan	Export Insurance Division, Ministry of International Trade and Industry	EID/MITI
Korea	The Export-Import Bank of Korea	EIBK
Netherlands	Nederlandsche Credietverzekering Maatschappij NV	NOM
New Zealand	Export Guarantee Office	EXGO
Norway	Garanti-Instituttet for Eksportkreditt	GIEK
South Africa	Credit Guarantee Insurance Corporation of Africa Limited	OGIC
Sweden	Exportkreditnämnden	EKN
Switzerland	Geschäftsstelle für die Exportrisikogarantie	GERG
United Kingdom	Export Credits Guarantee Department	EOGD

APPENDIX 4.

PART II: PROJECT ANALYSIS: CONCEPTS AND USES⁶

II.1 Project Analysis Overview

Project analysis provides a framework for systematically assessing a project's financial and economic merits. Along with social and environmental assessments, policymakers use project analysis in deciding to accept or reject a project. As a decision-making tool, project analysis at its best can lead to wise rationing of scarce development funds.

The assumption in project analysis is that good projects (i.e., those meeting particular economic selection criteria) lead toward improvements in quality of life and/or economic growth. Thus, the objective of project analysis is to maximize social (or private) welfare given a set of social (or private) goals and constraints. Project analysis simply translates, where possible, all benefits and costs of a project into monetary values. The analyst's responsibility is to quantify or, at the minimum, qualify the full range of private and social costs (including income distribution impacts) and noneconomic impacts of the project for presentation to policymakers. The link between project analysis and macroeconomic planning is often implicit but explicitly ignored in such analyses. For example, some projects must rely on significant shadow pricing techniques to accurately reflect the project's net social benefits. This reliance should suggest to the analyst the fact that significant market distortions or failures are occurring in the economy which macroeconomic policies need to address. Ultimately, it is the responsibility of planners and political decision makers to decide if these economic benefits, along with the project's net environmental and social benefits, are acceptable.

II.2 The Evolution of Project Analysis in Developed and Developing Countries

Over the past two decades, the importance of public investment projects in the economic development plans of developing countries and the requirements of international lenders for systematic financial and economic evaluation has stimulated widespread use and interest in project analysis. From the efforts of academics and institutions such as the World Bank, the Inter-American Development Bank, and the Asian Development Bank, a methodology of project analysis has evolved which has a basic kinship with the benefit-cost methodology (particularly that which has evolved in the water resource area) of developed countries. However, major differences exist in these analytical traditions, as noted by Hitzhusen (1984).

The emphasis of project evaluation methodology in developing countries has been on shadow pricing critical factors of production, such as labor and foreign exchange, as well as incorporating income distribution weighting for economic growth and equity. In contrast, the benefit-cost methodology in developed countries has placed relatively more emphasis on the evaluation of amenities or technological externalities⁷ and regional economic development objectives. But this difference is changing as

applications of environmental benefits and costs to developing country projects are being developed (Hufschmidt et al. 1983). At present, use of project analysis is more common in developing rather than developed countries given the focus by the former on public sector projects.

II.3 The Project Cycle, Macroeconomic Context, and Conceptual Framework of Project Analysis

Like any methodology, project analysis has particular strengths and weaknesses. Clearly, project analysis is only one component in the project cycle. In fact, a complete cycle would consist of:

- Project Formulation—identifying and prioritizing appropriate needs for the region with a clear statement of project goals and outcomes
- Project Analysis—collecting and analyzing data (in this case monetary data) on project(s), then choosing optimal project(s) at any given point in time
- Project Sequencing—choosing the best time sequence (when to start) and optimal combination of projects for the country or region
- Project Implementation—actually beginning and finishing the project(s)
- Project Evaluation—reviewing the impacts of the projects after they have been implemented

A basic knowledge of the underlying concepts and theoretical distinctions made in project analysis is the first step towards making reasonable and meaningful analyses. While this manual will not go into depth on all concepts,⁸ a clear understanding of terminology and estimation techniques is important. A wide variety of tools and concepts can be used in project analysis for financial and economic assessments of projects. Although not all are relevant for every project, what often distinguishes good from poor analyses is the use of the proper combination of tools and concepts to the situation at hand.

Since different concepts (theory) and economic tools (methods) address various aspects of a project, it is useful to discuss them according to the question being addressed. The basic questions and suggested order are as follows (Gowen 1985):

1. What is the project **goal**?
2. What is the **perspective** used when valuing benefits and costs?
3. What is the correct type of **project comparison** to use?
4. What is the **time horizon** used in reporting benefits and costs?
5. How are **benefits and costs** valued?

6. What **decision criteria** are used in deciding to reject or accept a project?

The first step in project analysis is to clearly define the project's **goal**. If a planner is worked through the project formulation stage, this goal should be clear. For example, in the early stages of energy planning, a project's original goal may be to provide inexpensive fuels for households and industries at subsidized rates to encourage electricity use and industrial expansion. If, over time, imported petroleum becomes more expensive relative to local renewable fuels, the goal of energy projects in later years may change to energy conservation and the substitution of indigenous fuels for imported fuels rather than increasing commercial energy consumption.

Generally, the second issue to address in any project analysis is the identification of the **valuation** (or market) **perspective**.⁹ Either financial (private market) or economic (social) benefit-costs analyses are made in project assessments.¹⁰ Choosing the market perspective helps define the project's target group as either private individuals (financial) or society (economic)—such as the nation as a whole. After identifying the valuation perspective, a **with or without comparison** of projects must be clarified and consistently used throughout the analysis. For example, two alternative projects may be compared, or a new project may simply be compared to what will occur if the project is not implemented. Next, the project's **time horizon** must be clearly stated at the outset since an advantage of project analysis is the incorporation of time into valuing project benefits and costs.

After deciding the valuation perspective, type of comparison, and time horizon, a planner next decides what to include as project **benefits or costs**. For example, private market prices (as discussed later) are always used in a financial analysis, whereas shadow prices or social values are used in economic analysis. Finally, after identifying the type of project and methods of benefit or cost valuation, the project's benefits and costs must be compared. **Decision criteria** are the formulas used in project analysis that compare benefit and cost streams with the various criteria, thereby demonstrating somewhat different financial or economic attributes of a project. The following sections present the economic theory and tools used in addressing each of the questions in greater detail.

II.4 Valuation Perspectives

An analysis can be made using different valuation perspectives regarding what to include as important measures of a project's impacts (benefits and costs). These perspectives are distinguished from the group making the analysis, such as a private firm, a regional organization, or a national government. Two common perspectives in project analysis are financial and economic analysis. Financial and economic analysis look at a project from two quite differing standpoints: the private investor (financial) or the society (economic).

Financial analysis, sometimes also called a private cost or commercial market analysis, considers only the prices for all costs and benefits as

given by the private market, values often referred to as private opportunity values. The objective in such an analysis is to maximize private profits for the investor(s)—those who put up the investment money and stand to gain or lose in the private market. Defined as such, financial analysis is the type of analysis we as individuals carry out when deciding to accept or reject a project that could lead to either personal financial gain or loss. In a sense, it describes the commercial incentives for a project.

In contrast, **economic analysis** is concerned with the full social opportunity costs of a project.¹¹ In an economic analysis, the target group widens from the private investor (used in financial analysis) to society. The objective in an economic analysis is to maximize social welfare gains subject to meeting a variety of social goals. An economic analysis assumes that private market prices may not totally reflect the full benefits and costs society gains or bears, respectively, from a project. Because many benefits or costs in an analysis may have social values not equal to their private market prices, an economic analysis of a particular project tries to account for (internalize) as many social values for the key benefit or cost components as possible. Thus, at the minimum, economic analysis will try to estimate at least some of the social opportunity values of project benefits and cost.

While the financial versus economic distinction is important, the complementarity of these analytical approaches is equally relevant in project analysis. Basic financial analysis provides information on the profitability of a given enterprise to individual entrepreneurs or investors. Thus, it gives an indication of the commercial incentive structure and potential adoption rate by the private sector. In contrast, comprehensive economic or social benefit-cost analysis attempts to determine net gains from a societal standpoint, taking into consideration externalities (e.g., environmental costs), shadow pricing of unemployed or underemployed factors such as labor or foreign currency, and so on. If significant shadow pricing is required, it may be that a country's macroeconomic policies are creating market distortions that do not provide the appropriate market signals desired by the country. The placement of the analytical alternative along the financial/social benefit-cost continuum depends on who is seeking the question or the valuation boundaries one is setting.

Table II.1. Some alternative types or methods of project analysis

Type of valuation perspective	Major focus	Characteristics or alternative version
Financial	Private returns to equity capital, management, etc.	Determine private profitability and necessary incentives for adoption
Economic efficiency	Returns to society	Shadow pricing for market distortions e.g., unemployed labor, overvalued currency) Taxes and subsidies treated as transfers Interest on capital = return to society
Economic efficiency/growth	Originally used in LDCs with concern over increased economic growth as well as efficiency	e.g., Little-Mirrlees Manual - separate objectives for efficiency and growth and higher a priori weights placed on net benefits to higher income groups and government e.g., UNIDO Guidelines (1972) - weights on economic growth left to decision makers
Economic efficiency/growth/equity	Generally used in LDCs with dual concerns for growth and equity plus efficiency	Squire and Van der Tak, World Bank (1975) - <u>a priori</u> weights placed on net benefits to government and low-income participants
(continued)		

Table II.1 (continued)

Type of Valuation perspective	Major focus	Characteristics or alternative version
Economic efficiency/equity	Commonly used in post-industrial societies where a well-developed tax system exists to use as weights	Explicit weighting of net benefits by income class, region, etc.; weights possibly derived from from taxing system
		Present net benefits by income class, etc., for weighting by decision makers
		Provide alternative weighting functions to decision makers
		Constrained maximum or minimum targets approach
Economic efficiency and non-efficiency Accounts	Uses combination of monetary measure of net national economic efficiency and non-monetary or index measure of other accounts	<p>U.S. Water Resource Council, Senate Doc. 97 (1983)</p> <ul style="list-style-type: none"> - national economic efficiency - regional economic development - environmental quality - human well-being <p>U.S. WRC two objectives (efficiency and regional development), four accounts</p>

Adapted from Hitzhusen 1984.

Although only two perspectives are commonly considered in project analysis, several modifications of such perspectives are equally important. Table II.1 summarizes several of the many public investment or project evaluation methods that have evolved (Hitzhusen 1984). These methods include (a) the simplest form of financial analysis, (b) several shadow pricing issues related to economic efficiency analysis, (c) alternative approaches for combining efficiency, growth, and/or equity in one objective function, and (d) an approach which utilizes separate efficiency and non-efficiency accounts. A broadly conceived notion of project or benefit-cost analysis must recognize and deal with this diversity to avoid quick judgments or "strawman" arguments about the pros and cons of project analysis.

II.5 Time Horizon, Project Life, and the Time Value of Money

Time is critical to any project's expected benefits and costs because money received at the present time is preferred over money gained in the future: "present" money can earn interest or a return if saved or invested. Besides this time value of money, time is important to the length of the project. To set the time boundaries of a project, the project life, defined as the expected returns is technically feasible, must be decided at the beginning of any project. For instance, in the past large hydroelectric dams were generally expected to be functioning for up to 50 years, while a diesel set might have only a 20-year life expectancy.

The importance of accurate time boundaries and impact on project feasibility is clear when the concept of a time value of money is incorporated into project benefits and costs. Shortening or lengthening project life sets the time span for receiving benefits or incurring costs. Thus, the project life must be a realistic estimate of expected life, independent of how attractive or unattractive such a time period makes the project.

The time value of money is directly incorporated into project analysis through the use of a discounted cash flow (DCF). This type of analysis shows life-cycle flows for the benefits and costs as they are incurred in each project year by reporting the particular cash streams for each given time period (e.g., year, month, five-year interval). The advantages of expressing life-cycle costs and benefits by year are that the major factors influencing the pattern of benefit and cost streams can be readily seen, such as inflation, price changes, and risk or uncertainty. The ability of a DCF to incorporate changes in key benefit and cost streams due to projected or conjectural price changes is the most useful and instructive characteristic of a cash flow analysis. The changes in key benefit or cost streams are often systematically altered in sensitivity analyses.

Besides being able to accommodate price sensitivity analyses, DCF also has the advantage of readily identifying the actual year or years in which benefits or costs change. For example, the benefits (sales) from a tree farm planted with fast-growing tree species are not received until harvest, which could be anywhere from two to ten years after planting. Such patterns show up in a DCF, but not in an annual average cost analysis. Thus, DCF is a precise analytical tool for making definitive project

assessments. For this reason, the COMPRAN program uses only a DCF approach.¹²

To incorporate a time value of money into a DCF, discounting or compounding is used. To calculate the future worth or value (FV) of a present amount of money, compounding is used; to calculate the present value (PV) of future money, discounting is used. Compounding takes a value of a present-day amount and projects it into the future by compounding interest into the principal. This method is similar to putting a sum of money into a savings account and taking a compounded amount out in later years. In contrast, discounting takes future money streams and brings them back into present day value by removing the expected future interest factor. Both compounding and discounting use a **discount rate** which is the expected future opportunity cost of money, sometimes a current or real interest rate or a separate value depending upon the present time value of money as discussed below.

It is absolutely essential for all project analyses to use either discounting (use of year 1 prices as the base) or compounding (projecting prices to year n) if benefit and cost streams are to be added across years, otherwise apples and oranges are being added together. DCF uses the discounting factor when estimating a net present value (NPV). For example, in a DCF of a tree farm project, the total benefits (outputs) for year 8 are \$5,239, whereas total costs (inputs) for the year are \$4,420, making net benefits equal to \$819 as valued in year 8 prices. Using a discounting factor of 10 percent, the present value in year 1 dollars for the net benefits of year 8 is:

$$\begin{aligned} PV &= \frac{819}{(1.0 + 0.10)^8} \\ &= \$411 \end{aligned}$$

Two common errors made in project analysis are (1) confusing the appropriate type of interest that should be used, and (2) being inconsistent in its use. **Interest**, in a general sense, is the cost of capital to an investor, such as the government sector's bond rate or the private firm's prime rate. Given that the value of money may decrease in real terms over the time due to **inflation**, two interest rates can be used in project analyses. A **real interest rate** is the rate of return on capital without taking account of inflation. If real interest rates are used, all project prices and cost of capital must be reported in "constant dollars" (e.g., inflation is excluded). Alternatively, the **current (nominal) interest rate** is the rate of return as seen by the investor in the private market since it includes inflation; that is, the current rate is the sum of inflation added onto the real interest rate.

Inconsistency in the use of interest rate terms is probably the most common mistake in project analysis. If a constant dollar basis is used, a real interest rate (not current interest rate) must be used. By mixing real with current rates, benefit and cost flows are severely distorted to

favor particular flows. Most project analyses conducted by international agencies put costs and benefits in real terms, even though real rates for capital are not directly observed.

In addition to the issue of expressing money in current or constant terms, further problems arise with the choice of discount rate. Two major types of discount rates based upon a private (financial) or social (economic) sector valuation are generally used in project analyses. A private discount rate reflects either a current or constant rate (i.e., including or excluding inflation, respectively) based upon projections from the financial market (private opportunity costs). However, for economic analysis (social) purposes, it has been argued that the private sector rate is too high or at times too low relative to the time value society places on money. A social discount rate (public sector opportunity cost) can be used in place of the private rate. Because a social discount rate is extremely difficult to estimate, most countries and aid agencies simply assume some general rate (such as the 10 percent rate used by the World Bank).

II.6 Valuing Benefits and Costs in Financial and Economic Project Analysis

Quantifying benefits (project outputs) and costs (inputs) in monetary values involves (a) identifying all the benefits and costs arising from the physical effects of a project; (b) measuring the monetary values, where possible, of such benefits and costs; (c) putting these values into current or constant monetary terms; and (d) comparing the benefit and cost streams of the project through the use of project decision criteria.

After identifying the general benefits and costs in a project, monetary values for each flow are needed. As a financial analysis is concerned with a private market perspective, such an analysis uses existing private market prices when valuing the benefits or costs. In contrast, an economic analysis uses social valuations (shadow prices or shadow values) for at least some of its benefits and costs. In many instances, the social opportunity costs for an input or output may be equal to the private market values because no externalities or market distortions exist. In such cases, an analyst simply goes with the market price. In other instances, private values are used because social values are simply impossible to quantify easily. For critical inputs or outputs, however, social values must be estimated and used if social and private values differ significantly. An analyst must always optimize within time and budget constraints by estimating social values for those benefits and costs that have the greatest impact on a project.

Thus, the estimation of benefits and costs in financial versus economic analysis is quite different. As noted earlier, by making both financial and economic analyses, a project can be viewed from two perspectives. Because different values are used in the two types of analyses, different conclusions about the feasibility of the project may result. Some important distinctions between financial versus economic analyses available in COMPRAN made in the estimation of benefits and costs

include:

- . Financial Analysis

- Only private market values are used for benefits and costs
- Capital costs are spread over the project life (amortized) or over the loan period if debt financed
- Taxes and other transfer payments between groups are included
- Private discount rate is applied

- . Economic Analysis

- Social opportunity values (shadow prices) are used for benefits and costs, such as
 - * Labor (shadow wage rate due to unemployment or underemployment)
 - * Environmental benefits and costs (e.g., soil erosion, pollution)
 - * Unemployed or underemployed factors of production (e.g., underutilized plant capacity)
 - * Foreign exchange (separating the import component from the domestically produced goods of the project)
- Capital is included as a lump sum in the year it is used (not spread over the project life)
- Market subsidies are removed (full production costs used)
- Domestic taxes are not included since they represent transfer payments within society
- Equity issues may be considered through weighting net benefits flowing to various income groups or listing the project's benefit and cost flows by income groups

The treatment of capital is a substantive difference in the two analysis techniques. In a financial analysis, capital is amortized by being spread into annual payments over the project life or loan period. In an economic analysis, however, capital expenditures are fully accounted for in the year they occur since society incurs the debt the year of the expenditure. For example, suppose a \$60,000 loan is needed the first year in a project for a bait culture project. In a financial analysis, annual capital payments of \$7,888 would be recorded in a project's cost flows assuming equal annual payments and a 10 percent interest rate for the 15-year loan period; whereas in an economic analysis the \$60,000 is totally accounted for in the costs of year 1.

The use of shadow prices for labor, fuel (nonsubsidized prices), environmental effects, foreign exchange, and land rental is a further distinction between financial and economic analysis. Shadow pricing the foreign exchange costs is particularly important in capital-intensive like purse seining where imported technologies are used. The foreign exchange component is shadow priced by determining the percentage of the total capital (such as a foreign loan) and O&M costs imported and thus paid for with foreign exchange. This amount is then multiplied by a shadow exchange factor:

$$\begin{array}{rclclcl} \text{Foreign Exchange} & = & \text{Total} & \times & \text{Percent Imported} & \times & \text{Shadow} \\ \text{Shadow Value} & & \text{Cost} & & & & \text{Exchange} \\ & & & & & & \text{Factor} \end{array}$$

Shadow exchange factors vary widely between countries. For example, a 1.2 factor implies that the full cost to society when importing a dollar's worth of goods is 1.2 times the official cost in the country's currency.

A fourth critical distinction is the treatment of taxes. Domestic taxes or other transfer payments between groups within society are usually not included in an economic analysis because they are viewed as transfers within the economy and do not represent additions to or subtractions from the economy's production of total goods and services. Because subsidies are also transfers between groups in a society, they are netted out of the analysis. For example, a government tariff price of \$0.22/kWh should be used in a financial analysis of an electricity project, but the full costs of production, possibly \$0.60/kWh, should be used in the economic analysis.

Finally, equity concerns, such as the project's income distribution effects, are a further social objective that can be incorporated into an economic analysis. For instance, weighting particular cost or benefit stream(s), although highly subjective, is a technique sometimes used in economic analysis. It gives particular benefits or costs more or less emphasis depending upon their beneficiaries.¹³

II.6a Capital Expenditures

Capital is a category of costs referring to project investments in (typically) manufactured means of production. Generally included under capital are expenditures for equipment, building construction, materials, engineering, and installation. Such factors are considered capital expenditures if investments, e.g., loans or equity, were made for their purchase at any time in the project. In contrast to capital expenditures operating and maintenance expenditures (O&M) include annual or recurrent cash flows that are paid directly by the project and for which loans are usually not procured.¹⁴

In a financial analysis, capital expenditures typically are accounted for as loans or equity, and use different repayment schedules (e.g., equal-annual) and loan periods based upon the type of financing. Several options are available to a project analyst in reporting capital payments on an annual basis. Optimal use of these options depends upon the type of

financing, the financing group, and the accounting procedure used in the analysis.

First, capital expenditures may be financed by an investor through internal cash funds (equity) or debt financed by taking out a loan. If a loan is needed to finance the project's capital expenditures, the borrower must pay a debt service equal to the interest paid on the principal in addition to paying off the principal. A variety of methods exist for determining annual debt service payments (Aplin et al. 1977, Gittinger 1982). For present purposes, it is simply important to recognize that if financing occurs a debt service must be paid over time.

A problem in the treatment of capital in financial analysis is that the borrower may or may not be the group maintaining and operating the system. In a private sector project, the borrower is usually the same as the user group. Thus, this investing unit pays the debt service. In a public sector or aid-sponsored project, however, the borrower is often the government or aid donor while the user is the community, household, or public institution. If the loan recipient (user) does not pay off the loan, and if the capital (equipment) is not being replaced by the user, a debt service is not included in a financial analysis for the user with outside financing. In contrast, debt service payments are included in the financial analysis made for the government.

Regardless of debt or equity financing, most projects usually need to replace the capital equipment at the end of its productive life. Gradual repayment or writing off the original investment is called **amortization** (Gittinger 1982). Two common forms of amortization include depreciation and capital recovery factor. **Depreciation** is a method of amortization used by accountants only for tax purposes when capital is being written off. It should not be used in project analyses.

Because depreciation does not account for replacement costs (e.g., initial costs plus inflation) of capital, a different form of amortization (capital recovery) should be used in most financial analyses. A capital recovery factor should always be used if it is intended that the project be self-sufficient and able to replace its capital in future years. As explained previously, the cost of money is expected to grow in future years at a certain rate, the interest rate (i). Only the **capital recovery factor**, the second type of amortization, includes an interest or money growth component as well as a principal component (Gittinger 1982).

II.6b Transfer Payments: Taxes and Market Subsidies

Taxes, royalties, and market subsidies are forms of transfer payments within an economy between different groups. In a financial analysis, taxes and subsidies are included in market prices in the annual benefit or cost flows because they are paid or received by the private investor. Conversely, economic analyses do not include taxes or royalties if they are transfers between groups in society. Market price supports are netted out, or subsidies added back into, economic analyses by using full production costs because society actually had to pay these full costs to produce the good.

APPENDIX 5(a)

TYPICAL PROJECT APPRAISALS
FOR FISHING AND PROCESSING PROJECTS

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APPENDIX 5(b)

TYPICAL PROJECT APPRAISALS
FOR FISHING AND PROCESSING PROJECTS

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NOTES

1. World Bank participation in cofinancing has recently been predicated on increasing the loan maturities and amortization of the project finance.
2. Public Investment. Taxation and the Tuna Industry: Approaches to Investments. pp 26-36.
3. As with most natural resource projects, integrated production-processing-marketing companies sometimes engage in transfer pricing of products to avoid local tax liabilities. For this reason, the pricing assumptions prepared by private companies to raise finance may be of particular interest to Pacific governments.
4. U.S. Trade Commission. 1986. Competitive Conditions in U.S. Tuna Industry. pp 16, 17, 163.
5. Appendix 1 has been extracted from a report by Ghadar Associates submitted to the Overseas Private Investment Corporation (OPIC) entitled, A Comparative Study of Official Programs of Selected OECD Countries That Provide Financing to Private Investors for Projects in Developing Countries, June 1985.
6. Appendix 4 has been extracted from a PIDP Report entitled, COMPRAN: The Project Analyst, A Computerized Project Analysis Package for Developing Countries, January 1987.
7. Also called spillover or third-party effects. Dasgupta and Pearce (1978) define externalities as a physical interdependence of production and/or utility functions which is not fully priced or compensated.
8. For this information, the user should consult basic benefit-cost texts such as: Commonwealth Secretariat (1982), Gittinger (1982), Mishan (1983), Gregersen and Conteraras (1979), Dasgupta and Pearce (1978), and Squire and van der Tak (1975).
9. Howe (1972) refers to these perspectives as "accounting stances."
10. Though not discussed in this manual, social accounting and environmental impact assessments are two other types of noneconomic project analyses that are equally important to planning.
11. Opportunity costs in economics simply refers to the monetary valuation of the best alternative use for the good or input. For example, if the market price (private opportunity cost) of kerosene is \$0.40/liter, but kerosene receives national subsidies of \$0.50/liter, then the social opportunity cost to the country of kerosene is \$0.90/liter, i.e., the full costs of production.

12. If first-year cost analyses are needed, the project life in COMPRAN is merely given as one year, whereby all future benefits and costs of the project are ignored.

13. Texts such as Irvin (1979), Gittinger (1982), and Mishan (1983) provide more detailed discussions of these distinctions.

14. Note this use of the term "capital" as expenditures for loans is somewhat more restrictive than many definitions, but is made for clarity within the COMPRAN program. COMPRAN has a separate data entry for capital expenditures in both the financial and economic analysis. As COMPRAN does allow for loans being secured to cover O&M costs, an analyst must be careful not to double count.

THE EAST-WEST CENTER is a public, nonprofit educational institution with an international board of governors. Some 2,000 research fellows, graduate students, and professionals in business and government each year work with the Center's international staff in cooperative study, training, and research. They examine major issues related to population, resources and development, the environment, culture, and communication in Asia, the Pacific, and the United States. The Center was established in 1960 by the United States Congress, which provides principal funding. Support also comes from more than 20 Asian and Pacific governments, as well as private agencies and corporations.

Situated on 21 acres adjacent to the University of Hawaii's Manoa Campus, the Center's facilities include a 300-room office building housing research and administrative offices for an international staff of 250, three residence halls for participants, and a conference center with meeting rooms equipped to provide simultaneous translation and a complete range of audiovisual services.

PACIFIC ISLANDS DEVELOPMENT PROGRAM

The purpose of the Pacific Islands Development Program (PIDP) is to help meet the special development needs of the Pacific Islands region through cooperative research, education, and training. PIDP also serves as the Secretariat for the 1980 Pacific Islands Conference, a heads of government meeting involving leaders from throughout the Pacific region, and for the Pacific Islands Conference Standing Committee, which was established to ensure follow-up on development problems discussed at the Conference.

PIDP's research, education, and training activities are developed as a direct response to requests from the Standing Committee. PIDP's projects are planned in close cooperation with the Committee to ensure that the focus and the organization of each project address the needs identified by the heads of government on the Committee, a process which is unique within the East-West Center and in other research and educational organizations serving the Pacific.

A major objective of the program has been to provide quality in-depth analytical studies on specific priority issues as identified by the Pacific Island leaders and people. The aim is to provide leaders with detailed information and alternative strategies on policy issues. Each Island country will make its own decision based on national goals and objectives. Since 1980, PIDP has been given the task of research in six project areas: energy, disaster preparedness, aquaculture, government and administrative systems, roles of multinational corporations, and business ventures development and management.