

PN-AAS-112

39032

Searching for Benefits

by

Peter Kilby and David D'Zmura  
Wesleyan University  
May 1984

Typed by:  
Susan Lydon

## Table of Contents

<u>Chapter</u>		<u>Page</u>
	Executive Summary	1
	Preface	4
I.	The Microenterprise Sector: An Overview	7
II.	Methodology of Benefit Calculation	11
III.	PfP Upper Volta	20
IV.	UNO Brazil	39
V.	IDH Honduras	59
VI.	DDF Dominican Republic	77
VII.	FDR Peru	101
VIII.	Comparative Analysis: Some Lessons	115
	Bibliography	132

## Executive Summary

This study examines five microenterprise lending projects, four of which were designed and implemented by private voluntary organizations. The purpose of the study is to draw lessons as to what in these assistance programs has worked and what has not. More concretely, we seek to explain the variance in performance among projects in terms of such "causal factors" as economic activities that are supported, location of project, the presence of certain external factors (e.g. low inflation, high rate of GNP growth), type of delivery system, the extent of complementary technical assistance and the special uses of PVOs.

The standard of performance from which all conclusions derive is not related to such conventional norms as loan default levels or the economic viability of the project in terms of interest income coverage of administrative costs. Rather the measuring rod is net economic benefits or additions to national income. This choice of measuring rod permits us to achieve two secondary objectives. First, we can compare the benefit-cost ratios of SSE projects with aid programs in other sectors. Second, it provides us with an opportunity to develop a specially-tailored approach to small enterprise which might serve as a standard methodology for evaluating all such projects in the future.

Microenterprise establishments provide part or full-time employment for a sizeable fraction of the non-farm labor force in most LDCs. These one-to-five person units are ubiquitous, found in town and village and operating in the areas of services, transportation, manufacture and distribution. Utilizing simple artisan technology, frequently operating in make-shift quarters with an investment ranging from a few hundred to a few thousand dollars, they provide a wide array of goods and services to the bulk of the nation's households. Because of their large numbers, relatively modest incomes and the fact that they are far removed from the normal pathways of access to scarce developmental resources, producers in this sector are attractive targets for an equity-oriented aid strategy. Owing to their comparative ability to work with the poor and the unorganized, PVOs are well-suited to execute such projects.

A central feature of many microenterprises is that they represent but one of several commercial activities being pursued by the family household. The "family firm" might, for instance, be engaged in farm cultivation, trading and artisan manufacturing. It is the fungibility of capital and labor between the diversified activities of the family firm that is

the source of the survivability of the microenterprise. At the same time this fungibility--particularly the diversion of loan finance to non-designated uses--created difficulties both for running loan schemes and for evaluating them. The evaluation difficulties stem from a lack of recorded information among client firms and vaguely-defined boundaries between family activities, on the one hand, and the severe problems of estimating those benefits arising from non-designated uses of the funds, on the other.

The method of estimating benefits is, in broad terms, as follows. For each of the five country projects--Upper Volta, Brazil, Honduras, Dominican Republic, Peru--thorough field evaluation reports provide data for a sizeable sample of client firms on increases in sales, profits, wages and employment. Three sets of benefit estimates are constructed. The minimum estimate includes only the increase in value added (wages, profit, interest, rent) in the client firms with a deduction for the opportunity cost of labour. The maximum estimate assumes lower opportunity costs in terms of foregone production elsewhere and induced production in supply firms and in firms catering to the new income-derivative consumer demand. Equity considerations are dealt with by weighting benefits accruing to the very poor by a factor 1.5. The most likely estimate is constructed between these two polar extremes by factoring in judgments about probable biases in the data, the effects of external considerations (e.g. the influence of a new road, a balance of payments crisis) and other omitted variables.

One chapter is devoted to each of the projects, with a description of project design and implementation followed by a step-by-step construction of the three benefit estimates. The final chapter presents the comparative analysis and the lessons that flow from it. The major findings are as follows:

1. All of the projects enjoy an undiscounted benefit-cost ratio greater than unity, with four out of five internal rates of return above 100%. These rates of return place microenterprise lending schemes among the most successful categories of all types of foreign aid programs.

2. None of these projects is successful as measured in conventional terms of interest income covering administrative cost and capital erosion. Indeed in only one case (Peru) does interest income fully cover administrative expenses. The lesson to be drawn is that self-sufficiency or project sustainability, while highly desirable, should not be equated with economic success or its absence with a failing project.

3. Among the five projects, those with extremely high performance levels obtain the bulk of their benefits from output response in the client firms. But for the moderately

successful projects a critical proportion of their benefits come from unseen external economies--backward linkage, the final demand linkage and consumer benefits. There is an important lesson for project design with respect to the first and third of these external economies. Although very numerous, retail trade establishments normally create no new backward linkages; ceteris paribus, projects that exclude trading firms as clients will have a higher benefit-cost ratio. Consumer benefits via competition-induced price reductions only occur where client firms constitute a significant proportion (say 20%) of the suppliers in the market in which they compete; ceteris paribus, projects situated in localized market areas will enjoy a higher benefit-cost ratio.

4. High rates of inflation are powerfully detrimental to project performance. In the great majority of instances where inflation exceeds 40%, government or PVOs are reluctant to set loan interest charges equal to the rate of inflation. Negative real interest rates impose a heavy cost in capital erosion and, at the same time, reduce measurable benefits by creating an incentive for the borrower to divert loan proceeds to non-productive inflation hedges.

5. SSE loans produce benefits in periods of economic contraction and in periods of economic expansion. The benefits are larger in expansionary phases.

6. With respect to the loan delivery system, very simple systems are the most cost-effective and, by virtue of greater timeliness in disbursement, yield greater benefits to the borrower. Such simple systems involve relatively few visits, do not require extensive documentation of past business performance and do not attempt an in-depth evaluation of the proposed use of funds. With respect to loan pay-back, strict policies of repayment enforcement are essential, including recourse to the law courts. Other incentives for prompt loan repayment include the prospect of repeat loans, loss of national consumer credit standing and the use of collateral.

7. Despite the intuitive appeal of technical assistance as a means of strengthening managerial and technical capacity of the borrowers, the record in these projects and elsewhere is that such assistance does not reduce production cost or permit more rapid expansion for the vast majority of its recipients. On the other hand, by adding substantially to costs, technical assistance worsens the benefit-cost ratio.

8. While PVOs are not the only agency to design and implement successful microenterprise projects (e.g., FDR Peru, BKK Indonesia) they do possess a number of special attributes which give them a potential comparative advantage in this area: an ability to learn from past mistakes by virtue of

continuity in the field, strong motivation to work at the local level with the poor and unorganized, a favorable perception by the client population, freedom from local political pressures, and a strong cost advantage with respect to both expatriate and local personnel.

## Preface

The purpose of this report is to apply economic analysis to a sample of well-documented evaluation studies of PVO projects in order to draw whatever broad lessons a comparative perspective might reveal. The heart of the venture is the construction of benefit estimates for each of the five projects. These are presented in Chapters 3-to-7 along with a description of project design and implementation. For purposes of the comparative analysis, one of the projects chosen was not a PVO undertaking but rather implemented in a more typical fashion by the government-owned Industrial Bank of Peru.

For all those connected to development projects, benefit-cost analysis raises extreme anxiety. There are many reasons why this is so. Even under ideal circumstances, estimating benefits is necessarily arbitrary. While those who execute projects are nearly always over-optimistic about the good they do, outside evaluators working under severe time and data limitations usually omit certain classes of benefits that are indirect and hard to document. In the present case, not only are we relying on such outside evaluations but we are applying a pioneering methodology which contains its own potential for error. Yet the calculation of a benefit-cost ratio creates the illusion of scientifically boiling down all the imponderables--economic benefits with long gestation periods, external spill overs at a second and third remove, equity considerations, the human process of participation, the creation of a sense of achievement and its attendant spur to social cohesion--into a single ponderable "bottom-line" figure. Whether this figure is greater or less than one (i.e., discounted benefits greater or less than discounted costs) can lead to the expansion or termination of a class of projects, can create a bureaucratic mini-empire in Washington or erase the division altogether; and can raise or lower the current status and future economic prospects of the executing PVO. So, although responsible assessment must go forward, the anxiety is not misplaced.

Acknowledging the extreme delicacy of the exercise is not to write down ex post benefit-cost analysis as our most powerful analytic tool for understanding what works and what

does not in the field of development aid. There are those of the "social empowerment" school who argue that benefit measurement omits extremely important social gains that are inherently unmeasurable, e.g. participation leads to improvement in the quality of poor peoples' lives. Some even use this type of argument in an aggressive fashion to assert that quantitative endeavors such as this should not be undertaken. No viable alternative is proffered. Although frequently trained sociologists, the proponents are seldom able to establish unambiguously that the quality of life has improved independent of changes in income. One sees in these five cases and elsewhere that social mobilization can be sustained as long as it facilitates economic gain; where the new social activities do not yield material advantage they soon dissipate. While in some cases economically very successful projects may have socially disruptive spill overs which moderate the net benefit, the reverse is not true. Failing projects provide neither the incentive nor self-confidence to undertake new forms of social cooperation. They are simply one more failure. Lastly, with respect to the present undertaking, since identical measuring techniques are applied across all projects the validity of the inferences drawn can only be overturned if the social effects are both strong and in opposite directions as between countries.

It is in the nature of such a venture as this that much of the human capital invested in the report was debt-financed. This loan capital for the project descriptions was supplied by David Befus, Susan Goldmark, Judith Tandler, Jeffrey Ashe, Sheri Berenbach, Peter Frazier and Cheryl Lassen. We made particularly heavy demands on David Befus and Oscar Chicas of the Honduras project. Many valuable comments were received from the participants in an AID workshop; Ashe, Goldmark and Tandler were particularly helpful. On the complexity of measuring benefits we have received wise advice from Dennis Anderson, Price Gittinger, Jack Upper, Stan Lebergott, J.D. von Pischke, T.M. Whitin and Stephen Haggblade. Our greatest debt is to Carl Liedholm who, besides his contributions of empirical benchmark estimates, held our feet to the fire on the labour opportunity cost issue. Judy Gilmore and Ross Bigelow of AID were gracious taskmasters.

## Chapter I. The Microenterprise Sector: An Overview

The five projects under examination in this report are designed to assist producers at the lower end of the small-scale enterprise sector. Variouslly described as micro or informal enterprises, these units provide some form of employment for a sizeable fraction of the non-farm labor force. Because of their large numbers, relatively modest incomes and the fact that they are far removed from the normal pathways of access to scarce developmental resources, producers in this sector are attractive targets for an equity-oriented aid strategy--if they can be reached.

Microenterprises are ubiquitous, found in town and village and operating in the areas of services, transportation, manufacture and distribution. Utilizing simple artisan technology, frequently operating in make-shift quarters, these one-to-five person units provide a wide array of goods and services to the bulk of the nation's households. Because these producers seldom have access to externally-supplied inputs into the productive process--loan finance, imported capital and intermediate inputs, knowledge as to improved techniques and as to managerial procedures--it would seem to follow that making good these deficiencies will lead to an expansion of income and output.

The range of enterprises covered in the projects in Upper Volta, Honduras, Dominican Republic, Brazil and Peru may be taken as representative of the underdeveloped world at large. In Table 1.1 selected attributes of both the firms and their owners are given for the five projects and for surveyed firms in four additional countries.

It can be seen that the average number engaged (including the owner) is between three and four, half of the units typically being one or two-person units. Of the employees, about 80 percent receive a wage, with apprentices and family labor constituting the balance. Both as employees and owners, women make up about one-fifth of the population. Average investment ranges from less than \$200 to over \$7,000. The primary reasons for the wide intercountry variance in all these

TABLE 1.1  
COMPARATIVE STATISTICS ON MICROENTERPRISE ESTABLISHMENTS

	UNO/Recife Report 1982	DDF Report 1982 Solidarity Component	Micro- enterprise Component	PfP/UV Report 1982	IIDI/IDH Report 1982	FDR/Peru Report 1982	Freetown, Sierra Leone ILO 1976	Kumasi Ghana ILO 1975	Manila Philip- pines ILO 1976	Jamaica MSU 1978
Firms surveyed	2016	978	101	313	161	3,000	1,000	324	3507	722
No. engaged	3.1	1	3.2	3.0	5.5	6.2	1.9	4.5	3.2	2.2
% employees receiving wage	78	--	80		75	80	54	94		
% employees who are women		--	11			18	16		21	32
Monthly Sales (\$)			1,871	617	2,709	1,077	129			
Total Invest- ment (\$)		450	5,113	2,500			130	1,354	7,254	792

CHARACTERISTICS OF OWNER

Age		31	38		39		33	30	43	40
Years of education		4	10				2.7		8	4
% women	15	17	20	10	19	25	26		57	51
Monthly earn- ings (\$)	163	261	212	150	387	352	88	272		
% with other sources of income	22	9	29	55	46	30			13	

averages are differences in (i) the industry mix of the sampled firms as between countries, and (ii) the incidence of ownership versus rental of land and building, in the case of investment.

There is greater commonality with respect to the age of the entrepreneur and the level of monthly earnings. These units are not established by young men as a form of marginal employment while they search for high-paying jobs in the formal sector. Rather they are permanent enterprises that yield a substantial income to their owners.

In terms of industrial organization, most microenterprises entail little division of labor or management organization and are based on widely-existing technical knowledge, existing labor skills and utilizing existing raw material supplies. Production risks are few, barriers to entry are low and competition can be quite intense as departing apprentices and employees set up their own units in the same industry. These traditional microenterprises activities can be contrasted with non-traditional ("modern") small-scale industry which is typically characterized by a greater degree of technological specialization, a formal management organization and a larger scale of investment and employment (usually ten or more employees). For these non-traditional enterprises the knowledge, skill and inputs do not already exist in the needed form and therefore the risks of failure are high. Because there are barriers to entry both with respect to capital and knowledge, the number of producers are fewer and intra-industry competition is light.

The economic roles played by these two subsectors are quite distinct. For a long time to come the traditional subsector will provide more employment and income than the non-traditional subsector. Moreover a larger share of the former's output will be fulfilling "basic needs;" that is providing low-income consumer and producer goods for which there are no substitutes save at far higher prices. For its part, non-traditional enterprise will provide a much wider range of goods and will, from its small base, enjoy a faster growth rate. It will also be this subsector that ultimately furnishes the largest single source of indigenous entrepreneurs for large-scale industry, albeit the number of modern small firms that grow up and out of the small-scale sector will constitute a minute percentage of the total population of such firms.

A central characteristic of the microenterprise establishment, excluding only those in very large cities, is the fact that the unit represents but one of several commercial activities being pursued by the family household. The "family firm" might be engaged in farm cultivation, trading and an

artisan craft. Labor and capital are shifted among the activities as family circumstances and comparative profitability alter over time. Thus we see in Table 1 that a significant fraction of the interviewed owners report other sources of income.

It is the fungibility of capital and labor between the diversified activities of the family firm that is the source of the survivability of the microenterprise. As we shall see in Chapter III lending projects serving the traditional microenterprise sector enjoy, relative to projects serving modern SSEs, a high level of benefits a major reason for which is the comparatively small portion of firms which fail. At the same time this fungibility is the source of considerable frustration to those who would aid the sector. In contrast to lending to non-traditional small industry in which the financial flow is specific to that enterprise and its disposition is fully traceable, in the case of the microenterprise boundaries separating other family activities are undefined and the absence of written records provides a smoke-screen as to the actual use of the funds that only the most energetic creditor can penetrate.

The problems of carrying out ex post evaluation of aid programs to microenterprise are no less daunting. The lack of recorded information and vaguely-defined boundaries make data collection extremely difficult. At the same time a good portion of the benefits--namely those accruing to the non-targeted family activities--are likely to be omitted from the count.

## Chapter II. Methodology of Benefit Calculation

In one way or another the usefulness of any development project comes down to a judgment about the benefits created relative to their cost. The economic costs of a project consist primarily of out-of-pocket expenditures and are usually easily recognized. Economic benefits are more difficult to discern, both because a portion of them is indirect and because they must be pruned of opportunity costs to arrive at a net figure. Economic benefits measured most generally are all net additions to the national income.

Intermediate indices of project success--sometimes given prominence in impact evaluations--include new employment, new firms, creation of additional productive capacity, expanded industry sales. In all these cases it is the additional income associated with the intermediate index which is the true benefit, e.g., employment without income is of little utility, larger firms or more investment are only desirable to the degree they generate more income.

In the aid programs being considered, loan funds and technical assistance are provided to producers to enable them to increase their gross output. What the effect on national income of this increase in their sales or gross output will be depends upon the opportunity cost of hired factors (mainly labor and imported inputs) and upon the degree of unutilized capacity in the firms which supply them and in the firms catering to consumer demand deriving from the income generated by the project.

The economist's definition of project success as an outcome where the increment in national income exceeds the resources expended to achieve it can be contrasted with two more familiar notions of project success. The first is commercial success or sustainability: a project is successful if interest income from loans and charges for technical assistance fully cover the cost of funds and administration. The second notion locates success in the producers being assisted: if output, employment and profits in the client firms show substantial advancement relative to the size of the effort, the project is adjudged to have passed muster. The

first notion of sustainability is of great importance --perhaps even a sine qua non-- for maintaining administrative discipline and insuring institutional survival. The second notion focuses on the right variables, but it does not go far enough with respect to indirect benefits and subtracting output that might have been lost elsewhere. Success as measured by sustainability or output response in client firms may or may not coincide with economic success. Equally non-sustainability or low direct output response does not necessarily imply economic failure.

We can now state concretely how benefits are measured. Defining value added in any firm to be gross output less purchased inputs from other firms, we can see that the value added within the individual firm is equal to wages, rent, interest and profit. Thus value added is equal to the income of the four factors of production. The increase in value added as a result of the project will overstate the benefit if the new employees left a previous job and were not replaced or were replaced by less productive workers. An appropriate subtraction is required for the lost output ("opportunity cost of labour").

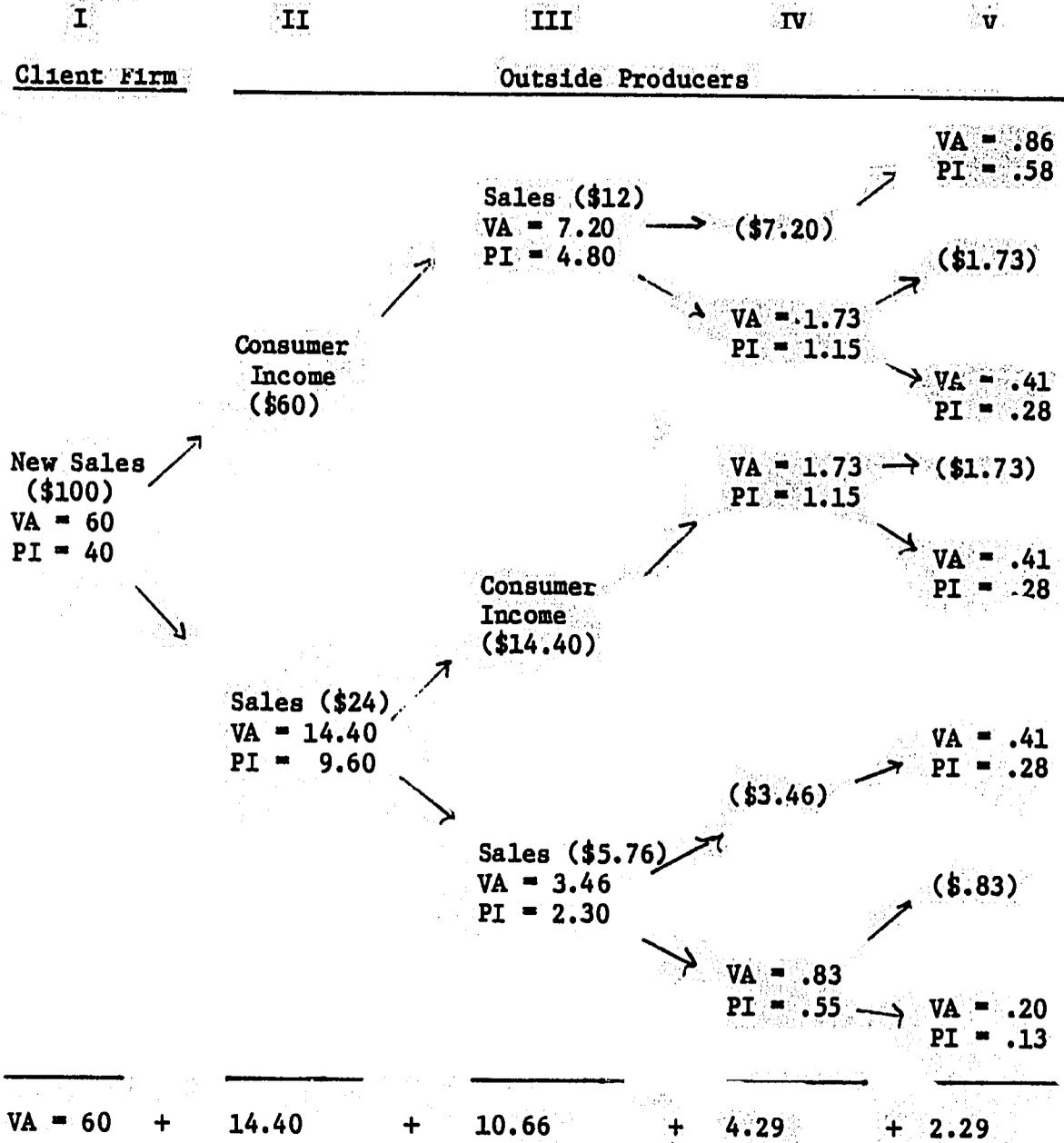
Beyond direct value added, there are two indirect benefits in the form of value added generated in firms outside the project. First, the purchased input component of sales of client firms is a benefit to the extent that these materials are produced within the country and that they are new production rather than sales diverted from other customers. This is termed backward linkage. Second, a portion of the direct factor income will be spent on consumer goods and services the producers of which have unutilized capacity. This is termed final demand linkage.

A simple example might be helpful to illustrate these three major elements of the aggregate benefit. Consider a single client firm, a carpentry shop. Before the loan, monthly sales of this three-man firm were \$150 of which \$60 went to purchased inputs (lumber, nails, glue, etc.), \$25 went as wages to a journeyman, with a residual \$65 "profit." The latter is apportioned as follows: (a) an unknown amount in-kind to an apprentice, (b) an implicit wage to the entrepreneur, and (c) a return to his capital and risk-taking. As a result of the new orders financed by the loan, sales rise to \$250 and a new apprentice is taken on. Of the incremental sales of \$100, purchased inputs absorb \$40.

Benefits are as follows. Incremental wages = 0;  
incremental profits = \$60; new employment = one apprentice;  
total direct value added = \$60. With respect to the backward

Figure 2.1

Project Benefits: Direct and Indirect Value Added



VA = .6 sales PI = .4 sales  
 Backward linkage = .6 purchased inputs = .24 sales  
 Final demand linkage = .2 value added = .12 sales  
 Total Sales = 100 + .36(100) + .36<sup>2</sup>(100)... = 100/1-.36 = \$156.25  
 Total Value Added = \$156.25 x .6 = \$93.75.

linkage to firms outside the project that results from the \$40 of new raw material purchases, we assume that 40% represents the opportunity cost of labour and foreign exchange content. Thus the net backward linkage is 60% of \$40 = \$24. Regarding the final demand linkage to firms outside the project, we assume that the additional profit income will be spent and that one-third of it will go to domestic producers of consumer goods and services who have excess capacity. If we allow a 40% opportunity cost as before, the net final demand linkage is 20% of \$60 = \$12. The aggregate of direct and indirect benefits now comes to \$60 + \$24 + \$12 = \$96.

Table 2.1 illustrates the above case in more detail, showing how the linkage effects interact over subsequent rounds of expenditure. The \$100 of new sales financed by the loan in round I gives rise to value added in the client firm of \$60 and then in subsequent rounds another \$56.24 sales of which \$33.75 is value added.<sup>1</sup> Note that the truncated method used in the text yields a higher figure (\$96) than the more precise expansion (\$93.75) displayed in table 2.1. This is true even though the expansion picks up higher order income effects, i.e., the indirect income created by both the backward linkage and final demand linkage give rise to yet further income effects. The explanation is that in the expansion there is a 40% opportunity cost deducted from the backward linkage at every stage.<sup>2</sup>

While there are other benefit components we measure--training, price reduction, diversion benefits, weighted wages for the very poor--normally it is the increase in sales that is central in determining the level of aggregate benefits. Given the size of the opportunity costs we assume, only in rare cases does the sum of direct and indirect value added exceed the increment in sales.

---

1 The \$60 of value added in the client firm must be adjusted for the opportunity cost of the new apprentice, perhaps half the journeyman's wage of \$25.

2 This outcome depends upon the relative shares of value added and the purchased inputs in sales. As the share of VA rises and PI falls the income effects are enlarged and the backward linkage opportunity costs are diminished. When  $VA/sales = 66.6\%$  the two methods give identical results; for all higher VA proportions the expansion method produces a higher benefit.

Thus the sales response of the client firms is the focus for estimating project benefits. This naturally leads to the question of causality. Is it legitimate to attribute an observed increase in sales over a two or three year period solely to the receipt of a loan? Taking the polar case, could it not be that the same increase in sales would have occurred without the loan? Some event or combination of events--a new road, rising consumer income, a reduction in supply (rise in price) of formal sector goods--raises the profitability of production, which induces the entrepreneur to cut back on family consumption (increased savings) or divert capital from another use in order to finance the expansion of output. One way to test this would be to use a control group, taking the differential increase (or decrease) in sales as being attributable to the loan.<sup>1</sup> But does this do the trick? If capital was diverted from another use, that other (invisible) income was lost to the control group but not to the loan recipients. If it was financed by a sudden spurt in savings, the control group suffered a reduction in its real economic welfare. Equally, loan recipients may be diverting a portion of their loan to non-designated uses, perhaps uses with a higher value added pay-off, all of which goes unreported. For all of these reasons use of a conventional control group will underestimate the net benefit of loan finance.

The proportion of the sales increase which results from the receipt of the loan, as well as the extent of benefits from loan diversion, is a matter that must be determined by a close reading of each case.

Another thorny issue is the opportunity cost of labour. It is common wisdom that there is substantial unemployment in both the village and the urban economy of high-birth rate, poor countries: a new job in microenterprise reduces only the number of unemployed. It is the wisdom of economic theory that human ingenuity and competitive labour markets abhor unemployment: a new job in microenterprise reduces output elsewhere in the informal sector or the household economy. In the first case the opportunity cost of labour is zero, in the second it is somewhere near the going wage rate in the informal sector. A review of empirical studies supports two limited generalizations: (i) during the peak agricultural season the opportunity cost of labour is well reflected in the rural wage

---

<sup>1</sup> We use control groups in the two instances where they existed. As a general rule control groups are not a real choice. Firms only cooperate with those who demand sensitive information if it is a pre-condition for a loan or technical assistance. Save under unusual circumstances, entrepreneurs will not agree to serve as a control group.

rate, and (ii) male heads of microenterprise typically have job opportunities elsewhere. For the rest, albeit each case will vary with local circumstances, we believe the applicable mechanism is that of a "ladder of job step-up." This approach holds that the job vacated by the new microenterprise employee is taken over by someone previously engaged in a less productive activity, and so on down the ladder until the final person is vacating a state very close to pure unemployment.

And now to the immediate application. The evaluation reports contain some statistics for all client enterprises and detailed data (including sales, purchased inputs, some measure of profits, wages and type of employees) from a roughly representative sample of the entire population. The basic technique for applying a uniform set of estimating principles to five unique situations where not only opportunity cost and linkage coefficients may vary but where there are issues of data reliability--respondent ignorance, intentional misreporting, non-random samples, a range rather than a single reported figure--is to construct two polar benefit estimates, a minimum and a maximum.

In the minimum case, in the absence of information to the contrary, we apply the following conventions:

1. The lower end of all range estimates is the actual figure.
2. No firms or jobs are saved as a result of the loans and assistance.
3. All labour is treated as having an opportunity cost equal to the wage rate.
4. There are training benefits equal to half the journeyman wage rate for each apprentice.<sup>1</sup>
5. Net backward and final demand linkages are zero.
6. Consumer benefits from price reductions or price increases prevented are zero.
7. There are no benefits from loan diversion.

<sup>1</sup> We assume that the apprentice's "wage" is composed of in-kind payments equal to half the wage rate and a training benefit equal to the other half.

In the maximum benefit case we make the following set of assumptions in the absence of information to the contrary:

1. The upper end of all range estimates is the actual figure.
2. Firms and jobs are saved equal to the differential reduction of firms and jobs in the control sample.
3. Only the entrepreneur is treated as having opportunity cost.
4. There are training benefits equal to half the journeyman wage rate for each apprentice.
5. A premium of 50% is added to the wage payments (including apprentice in-kind income calculated at half the wage rate) as a benefit of improved distribution of income.
6. Net final demand linkages are equal to 20% of direct value added.
7. Net backward linkages are equal to 70% of purchased inputs, exclusive of those purchases attributable to retail trading firms.<sup>1</sup>
8. Consumer benefits are equal to the initial quantity times the price reduction, plus the additional output times half the price reduction.<sup>2</sup>
9. There is a diversion benefit.

<sup>1</sup> We assume that the expansion of trading firms does not normally lead to higher national retail sales, but rather a displacement of less efficient forms of distribution. The new set of backward linkages is roughly offset by the disappearance of another set somewhere else. This is not to suggest that on other grounds providing assistance to retail or wholesale traders might not be highly beneficial, e.g., opening up previously isolated market areas, as a channel of credit to low-income consumers, as a prelude to going into manufacturing.

<sup>2</sup> In theory the price reduction on the initial quantity is merely a redistribution of income from the producer to the consumer, not an additional benefit to the system. In practice the evaluation reports only tell us the actual change in profits given that the price reduction has in fact occurred, so the gain in real income from lower prices is properly counted a benefit.

There are several conventions for handling missing information which are common to both the worst and the best cases. It is assumed that there are 300 working days in the year. One half of loans in default for 12 months or more are treated as unrecoverable, and hence are added to project costs. Lastly, we treat the timing issue uniformly. We infer from the evaluator's report that the average firm is in the program for (say) 1.5 years and we are told that there was new employment of 1,500 and an increase in annual profits of \$500,000. We do not assume that these magnitudes were reached on the first day of the program and, hence, can be multiplied by the number of years in the program. Rather we assume that they commenced at zero on the average borrower's first day and rose at a uniform rate attaining the reported magnitude on the day of the evaluation; hence we take the value at the mid-point of the time interval. Thus in the example above, the project gave rise to (a) incremental person-years of employment of 1.5 average-years-in-program x 1,500 x .5 time adjustment = 1,125, and (b) incremental profits of 1.5 x \$500,000 x .5 = \$375,000.

Having constructed our minimum and maximum estimates, we proceed to fix a "most likely" intermediate estimate for each benefit subcomponent. Here we bring into play everything we know about the economy (e.g. unemployment levels, the ratio of intermediate good imports to GDP, movements in consumer income), all the internal evidence from the evaluation report and the personal opinions of those with direct knowledge of the project in order to make fine judgments about apportioning causality and about the size of the linkages. The sum of these subcomponents is the overall final benefit measure of the project.

Looking from a distance at the benefit-cost estimates that come out of this process, what can be said about the likely bias of the results? On the negative side, there is clearly substantial uncertainty about the magnitude of displacement effects and resource opportunity costs. While we believe we have been very conservative in constructing our conventions, we may not have been conservative enough. Where it is an important component of the total, the benefits from loan diversion are arbitrary in the extreme. Also the cost figures are surely too low: early investigation and pre-planning costs of most projects are not reported, nor are ad hoc outside contributions received by the PVOs; shared overheads are often not fully taken into account.

Against these negative factors, we can place a somewhat longer list of downward biases which tend to restore confidence in our calculations, or at least in the absence of any tilt toward overly-favorable results. First, there is the near-universal intentional under reporting of sales by tax-fearing entrepreneurs; in the one case where data were available to estimate this figure (Peru) it was 40%. Hence there is a systematic bias to under

estimate direct and indirect value added. Again, all these countries have overvalued domestic currencies, and since the import-content of SSE output is substantially less than that of the goods for which they substitute, the direct and indirect value added, measured by "border prices," is understated. Third, most of these projects are only three-to-five years old so that the high fixed costs of start-up and of learning from early mistakes tend to inflate the administrative expenditure per dollar lent relative to its long term level. Fourth, the .5 time adjustment convention clearly understates the speed with which working capital loans take their effect--again, benefits are too low. Finally, in the two cases where price reductions are important, the benefit figure is understated because it omits the increases in efficiency that is forced upon non-assisted firms selling the same products and the consumer surplus enjoyed by their customers.

In sum, while benefit-cost estimates derived by our method are unavoidably subject to a considerable degree of uncertainty, there is as much reason to believe they are too low as to believe they are too high.

### Chapter III: PfP UPPER VOLTA

Upper Volta, a small landlocked country of six million, is ranked among the world's twenty-five least developed countries.\* Agriculture and livestock sustain 80 percent of the population and account for 40 percent of GDP and 90 percent of its official exports. The country, however, is not self-sufficient in food; between 1977 and 1980, 160 tons of food aid was received. Many Voltaics emigrate to coastal countries owing to pressure on the land and lack of economic opportunities at home.

The project in question is located in the Eastern Region, an area of 50,000 km<sup>2</sup> and some 420,000 inhabitants living in 645 villages. Only eight percent of the primary school-age population is in school. On the edge of the Sahel desert, this area receives no rain for eight months and uncontrollable water for four months. Forty percent of the villages do not have year-round water. The Region possesses only 368 km of all-weather roads, 157 private cars and 35 private vans. One hundred eighty of the villages have market places which handle transactions primarily in agricultural produce and local crafts. A 1980 sample survey indicated the existence of 12,000 small scale enterprises, employing part or full-time 21,000 persons engaged in agricultural processing, weaving, dyeing, pottery, blacksmithing, tailoring, welding, carpentry and leather working. It is to this group of non-farm enterprises that the PfP project was primarily directed.

The PfP project was begun in September 1977 with two expatriates located in Fada N'Gourma, an administrative and marketing centre and one of the largest villages in the Region (population 8,000), and in Diapaga, a village of about 3,500, the center of an agricultural district bordering on Niger and Benin. The project design was for these two individuals to experiment with different types of credit funds and of technical assistance with the aim of discovering within two years those programs which could most effectively promote the development of self-sustaining small enterprise. The programs were to be pursued in a Phase II project. Within this overall

---

\*Based primarily upon the evaluation report by Susan Goldmark, Timothy Mooney, Jay Rosengard, Aid to Entrepreneurs: An Evaluation of the PfP Project in Upper Volta (June 1982)

assignment a wide variety of sub-tasks were specified, including "determining a viable and effective means for motivating entrepreneurs," identifying new entrepreneurial opportunities, and "installing and testing at least one market infrastructure improvement to assess its impact on increased market trade and to determine its replicability on a commercial basis."

A \$32,000 revolving credit fund and a \$50,000 experimental grant fund were written into the project. Although the program anticipated improving the business practices in 80 firms and disbursing 40 loans (20 for new enterprises) the aim of the project was not to create just another credit system. The two funds were to be distinct both in loan purpose and loan financing. Credit was to be granted through the revolving fund for conventional enterprises, using proven technologies in established economic sectors. The experimental fund was to finance innovative high-risk ventures. Credit approval through this fund was to be based upon the "potential demonstration effect of the profitability of a new methodology or technology." This assistance was to take the form of grants or interest-free loans.

#### Program Implementation

Two PfP expatriate staff members arrived in Diapaga and Fada N'Gourma in September 1977, with instructions to follow a process design. In accordance with this mandate, each was free during Phase I to develop the management structure which he deemed necessary. This characterized the relationship between field and base throughout the 1978-1981 period, as PfP/Washington provided little supervision or feedback on administrative procedures so as not to impose restrictions on the field staff. The several field visits which PfP/Washington did make, while valuable from a morale viewpoint, were not used to assist in the designing of an appropriate management information and evaluation system. Similarly, PfP/Washington did not undertake any management or financial audits during the four-year period.

Neither the general manager of the program, stationed in Fada, nor the operations manager in Diapaga had training or prior experience in controlling or monitoring a credit scheme.<sup>1</sup> Consequently, the project's management information

---

<sup>1</sup> The General Manager (BA in Government, MA in Economics from the University of Lund) had served six years with PfP, including three years in Liberia. The Operations Manager in Diapaga, received a BA in History (Gettysburg) and worked a decade in the Peace Corps as a health officer in various African countries.

system emerged through trial and error. In addition to the difficulties in developing an efficient record-keeping system for the lending operations, the advisors were not familiar with any system for collecting baseline data or tracking the performance of assisted enterprises. Thus, the evaluator of the experiments which comprised Phase I was guided more than might have reasonably been expected by subjective personal judgment rather than documented outcomes.

The lending operations in Fada were not closely supervised. While the advisor was preoccupied with directing his experimental fund activities, a dearth of incoming data on his area's revolving credit fund kept him ignorant of its decapitalization. In Diapaga, efforts to develop procedures for tracking loan applications and the progress of loan repayments were made; also technical and managerial assistance were given to clients. There was no time left for the collection of the longitudinal information on activities necessary to gauge impact costs and the changing status of the pilot project.

Essentially, the project shifted focus from the promotion of new self-sustaining enterprises to the provision of credit to small-scale economic activities. The field staff soon recognized that the original requirements of enterprise sustainability placed a sharp limit upon the pool of potential clients. In general, profitability and sustainability of specialized enterprises were only subsidiary concerns of established familial business, typically engaged in several activities. This, combined with the constraints on business expansion of the region's infrastructure and consumer purchasing power, swayed the staff to support sporadic small-scale activities. As a result of this change in lending orientation, the total loans given increased ten-fold. Indeed, by the end of Phase I, the expatriate advisors' main activities were managing their staffs as they analysed applications and collected payments.

There were several other modifications in the projects operations. With respect to lending, the revolving credit and experimental funds were commingled and the total funding raised to \$107,000. Although within the first year of Phase I, the entire \$50,000 of the experimental fund had been drawn down, the total spent on experimental fund activities over four years was only \$23,248. The hiring of local staff was not provided for in the original proposal. As early as November 1978, the Diapaga advisor had added a Voltaic associate and by October 1981, a total of five Voltaics had been hired in Diapaga and Fada. The Phase I project's time-frame was also changed, with three extensions pushing the terminal date from December 1979 to September 1981.

Let us consider the projects three main planned activities more closely. In the case of lending for traditional types of activities, formal loan criteria had been worked out by June 1978. Eligibility had three components: that the proposed project be profit making, and hence, self-sustaining; that the project contribute to the economic and social welfare of the area; and that it emphasize increased productivity and self-sufficiency of the area. The required documentation consisted of a loan application, a Balance Sheet, a Profit/Loss statement and an analysis of the loan's effect upon income and costs. In the case of new enterprises, detailed statements of investment needs, projected monthly income and costs were also stipulated. Collateral was not required. Regarding the ratio of the loan to the total investment, the applicant was to contribute a minimum of 20 percent. An annual interest rate of 10 percent was to be charged, with the repayment terms established at the advisor's discretion. There were to be no restrictions on repeat loans, save for the borrower's previous repayment record.

What did the evaluation team find three years later? In regard to documentation, it was found that both managers had abandoned the profit/loss statements, that the required 20 percent client equity contribution had almost never materialized, and, in Fada, that the selection of clients had been reduced to an instinctual process as interview notes and balance sheets were seldom utilized. The latter situation peaked in July 1981 when the Diapaga manager replaced the Fada manager, who left on sabbatical, and discovered the Fada repayment records in disarray. After several months of hard work, these books were reconstructed.

With respect to the \$50,000 experimental fund, no formal criteria were developed and few written records kept. Pioneer ventures -- in particular small dams, wells, fencing, agricultural projects -- were a major interest of the Fada advisor.

These agricultural enterprises, the Ninjala Dam and the Tiparga Experimental Farm, provide an interesting contrast between single-input or "missing ingredient" projects and integrated multi-input ventures. Ninjala is a village of 800 located some 15 miles from Fada in a barren terrain accessible only by motorbike path; it has no year-round water. PFP provided three tons of cement and a skilled mason, with the villagers providing the labour, to construct in three weeks a dam across a seasonally-filled waterway. The result is a permanent lake supplying, inter alia, water for the villagers and their 2,000 cattle. The commercial value of the latter's weight gain alone is 30 times the cost of the cement.

The Tiparga Demonstration Farm, PFP's largest project, involved supplying Tiparga village with the rented services of a bulldozer, mechanical shovel and tractor (plus fencing, tools, seed) in order to transform 17 acres of uncultivated bottomland into rice and vegetable plots, with beekeeping and grazing as dry season uses. In return for land preparation and overall coordination, the 12 participating families agreed to hand over one-third of their harvest to PFP. With three good seasons and participants paying up but one-tenth of their output, the project has been very successful for the villagers, with aggregate profits at 400,000 CFA. Ironically, although the social rate of return is negative when PFP's losses are factored in (1.5 million CFA), this uneconomic project is the prototype for a major component of the Phase II activities. In this important instance the negative findings of the experimental Phase I are being ignored.

With respect to technical assistance, PFP initially attempted to teach many of the traditional management control functions, such as elementary bookkeeping, inventory control, monthly balance sheets and profit/loss statements. After a period, the training content was narrowed to two areas: general business planning and working capital management.

### Project Impact

Starting in September 1978 a total of 416 loans, equalling a value of \$275,000 and charged with an interest rate of 10 percent, were made to 313 clients. Repeat loans totaled 103 or 25% of all loans. Twenty-one clients received three or four loans. The average client was thought to be in the program 1.6 years. Average loan maturity was 1 year. Divided between the subprojects, Diapaga issued 222 loans totaling \$127,793 while Fada issued 194 loans valued at \$149,076. Additionally, 12 disbursements from the experimental fund totaled a value of \$23,248 and were made primarily in Fada (\$20,911).

The total life-of-the-project costs came to \$515,411, which AID covered as part of its matching grants program. These costs are broken down in Table 3.1.

Table 3.1

<u>Direct Costs</u>	<u>Actual Expenses</u>	
Expatriate Staff		
Personnel	\$165,557	32.1%
Benefits	17,803	3.5%
Housing	51,463	10.0%
1/4 of vehicles	15,002	2.9%
Local Staff	31,191	6.1%
3/4 vehicles plus office	63,849	12.4%
<u>Other Overhead</u>	170,536	33.1%
<u>TOTAL</u>	<u>\$621,205</u>	<u>100.1%</u>

As of September 1981, repayment was on schedule for 77 percent of the outstanding loans, with the repayment rate in Fada at 50 percent. Most all of the delinquent loans were overdue by more than six months. This recovery rate, however, compares very favorably with the 25 percent figure in the government's ORD credit program for village agricultural groups. The evaluation team estimated that about 9 percent of PFP's outstanding loans were unrecoverable. In terms of value, the Fada credit fund was 30 percent delinquent, with a 16 percent delinquency in the Diapaga fund. This difference in repayment rates is probably due to more frequent visitation of clients by the Diapaga staff as well as to the rescheduling of 10 to 15 percent of the Diapaga loans. The Fada staff pursued neither option. Of the \$23,248 disbursed for experimental activities, \$3,402, or 15 percent, was recovered.

Much can be learned from the PFP experience with delinquency. As has happened to other credit programs, many clients viewed their repayment obligations as non-binding. This was particularly the case in the more "cosmopolitan" Fada: "When they saw a white man giving out money without too much supervision, it was not difficult for some to imagine that PFP was yet another program for their welfare." (Lassen, p. 4) But a change in enforcement policy brought dramatic results. A new hard-line in 1982, entailing repossession and six arrests of the most flagrant defaulters, brought the Fada delinquency rate down from 50% to 13%.

The loans ranged in value from \$35 to \$3,170. Slightly over half of the loans were under \$500. A fifth of the loans were between \$500 and \$1000 and one seventh were in the \$1000 to \$1500 range. Average loan size was \$670. If one were to attribute all of the costs of this experimental program to the credit element, cost per loan would be \$1493 or 223 percent of the average loan granted.

The distribution of loans by sector is shown in Table 3.2. Of the total, roughly 25 percent went to new entrepreneurs or for a diversification of an established entrepreneur's activities. Well represented among the various enterprises were goat/sheep raising, rice production, rice/grain milling, weaving, tailoring, carpentry, blacksmithing, retail trade, butchery, baking, and donkey carts. From a survey of 74 clients, it was found that about half of the loans were for working capital. Specifically, 48 percent of the loans to this sample group were to pay for raw materials or merchandise, 23 percent were for equipment, 16 percent were for construction and short-term labor, and 5 percent were for multiple purposes.

Table 3.2

	<u>Proportion of Total Loans by</u>		
	<u>Number</u>	<u>Value</u>	<u>Average Loan Size</u>
Agri/Livestock	25.0	12.1	\$322
Agri Processing	6.5	10.6	1,083
Crafts	20.6	23.4	753
Commerce	35.6	46.0	869
Transport	<u>12.2</u>	<u>7.9</u>	<u>431</u>
Total	99.9	100.9	\$666

Of the 416 loans, the vast majority were to individual clients. Only 22 of the 416 loans were made to groups. Although group-lending permits many small sub-loans to more individuals and cuts average cost per loan, the weak leadership of most of the applicant groups was found to severely constrain the total number of groups assisted. In a region dominated by entrepreneurs from Nigeria, Benin and Togo, over 90 percent of the clients serviced were members of the local tribes (predominantly, Gourmantche, with the remainder Fulani and Mossi).

Almost none of the clients had access to formal credit. The ORD credit program, charging 13 to 15 percent interest, is directed towards groups that are primarily pre-cooperative agricultural institutions. The public National Development Bank (BND) and the private Banque Internationale des Voltas (BIV), lending at interest rates comparable to those of PFP, have eligibility requirements of a monthly minimum salary of \$100, sizeable assets, and literacy. The local bank in Fada requires the client to have a minimum salary of \$136 per month and full collateral. Two clients graduated to these formal credit institutions. Little use was made of the curb market.<sup>1</sup>

The training component of the program, once it had been drastically scaled back, appears to have been quite successful. During the use of the traditional approach to technical assistance, it was found that few clients learned the disciplines being taught and almost none used the techniques.

---

<sup>1</sup> Loans from money lenders at 60-to-180% interest are available. Recourse to this source of finance is very infrequent, limited to emergency situations of a few weeks to a few months duration.

The books which were kept were maintained only so as to please PfP, as the clients claimed they instinctively knew their business status. 'This phenomenon,' writes Schiller, 'combined with the fact that most of our clients were illiterate prompted us to take a second look at the range and complexity of the enterprises we were assisting to try to discover what the owners really had to know about what they were doing in order to succeed.' Based on this reappraisal, PfP decided to concentrate on two areas: general business planning and working management. This reorientation applies primarily to Diapaga. Little effort was made in Fada to promote traditional management techniques at the project's outset or to try an alternative approach later in the project. In Fada, credit was seen as the primary constraint, whereas in Diapaga the management of credit was perceived as important as the credit itself." (Goldmark et al, p. 72)

Two additional means of training were also employed. First, the applicant was often requested to perform a task, such as preparing a budget. This request was seen as both a training device and as a sign of entrepreneurial commitment and competence. And second, clients were used as business extension agents, as they could often anticipate problems that a new enterprise in their specialty was likely to encounter.

From the survey of 74 entrepreneurs, which was taken during the period of the revised approach, the training efforts made by the field staff differed markedly between Diapaga and Fada. About 60 percent of the clients in Diapaga received 2 visits per month or 24 visits over two years ('visit' being loosely defined), in contrast to 32 percent in Fada. Given the universal proclivity of entrepreneurs towards finance and a disinclination to fault their own management, the helpfulness of the technical assistance as perceived by the clients was surprisingly high. Of the sample of 74 entrepreneurs, 26 percent rated the technical assistance (mainly the planning component) as aiding their operations more than the loan. A combination of loan plus technical assistance was rated as most helpful by 42 percent, with credit alone receiving top marks from 30 percent. As would be expected technical assistance was given a higher rank in Diapaga than in Fada.

From the survey of 74 firms, the disposable income gained by the entrepreneur and his unpaid workers from the enterprise averaged about \$1,800 per year, ranging from a low of \$1,052 in the agricultural/livestock production sector to a high of \$2,364 for the artisan grouping. This, however, does not reflect the full income of the client group. Roughly 55 percent derived income from other economic activities, and most received food from the fields cultivated by family members.

What use did the clients make of their new income? From the survey, 30 percent of the clients reinvested in the assisted enterprise as the primary use of profits. Added together with the 9 percent figure for the purchasing of livestock, the 7 percent for investment in another enterprise and the 5 percent for the construction of rental housing, the total "primary use" of profits for income-generating activities was 51 percent. Of the other uses, family food consumption and housing were the most important. And finally, the possibility to divert the credit into alternative activities was quite substantial as the field staff did not closely monitor the use of the loans.

The characteristics of the assisted firms and their performance over the loan period may be drawn from the survey of 74 clients. Annual sales of the assisted enterprises at the date of the survey equaled \$7,400 per year ranging from \$2,655 for the agricultural/livestock production sector to \$13,500 in the commercial sector. Annual sales, exclusive of the commercial sector, averaged \$3,491. Average net worth was \$2,500, ranging from \$1,000 for the artisan grouping to \$4,300 in the agriculture/livestock production sector. Each client employed an average of 3 full-time equivalent workers. The location of suppliers for these firms was split roughly 60-40 between local and Ouagadougou. About 95 percent of the firms sold their goods locally.

On the whole, the loans impacted these enterprises favorably. Some 57 percent of the surveyed enterprises reported more sales with this figure being 41 percent for the non-commercial sectors; 55 percent reported more net profits; 13 percent reported more gross profits with the non-commercial sectors reporting a 23 percent increase; 36 percent reported more disposable income; and 60 percent reported more net worth. The average additional employment per enterprise was .34 person years.

From the PfP/UV evaluation of all Phase I clients, approximately 50 percent of the clients in Fada and 40 percent of the clients in Diapaga operated enterprises at a higher level than before the granting of the loan. Roughly 12 percent of the clients had diversified into new businesses and had continued their established operations. However, about 30 percent of the clients had bankrupted or abandoned their assisted enterprises. This failure rate approaches 44 percent for the diversified activities. The reasons for failure in Diapaga were regarded as: natural causes outside the control of the entrepreneurs (45 percent), mismanagement (18 percent), a decision to abandon (18 percent), inherently unprofitable ventures (7 percent), with the remainder being unclassified.

The project's greatest impact was on the consumer. Within the context of the two villages, the 416 loans, in excess of a quarter-million dollars, generated much activity and a significant increase in competition. Many clients spoke of "market saturation." In Diapaga the number of market stall holders expanded by 41 percent. The 74 firm sample reported an average increase in output of 57 percent. Although most prices were rising, the profits of the assisted enterprises rose more slowly. Reflecting the downward pressure on profit margins the share of value-added in sales fell from 55 percent in late 1979 to 40 percent two years later. This represents a relative price reduction of 25 percent.

Overall project costs expressed in 1981 U.S. dollars are presented in Table 3.3. These include bad debt, AID administrative expenditures and capital erosion owing to inflation.

We now turn to the construction of the three benefit estimates. In the minimum case, although employment per firm rose somewhat, paid employment actually fell, accounting for negative wage value added of \$2,880 (offset by a positive opportunity cost in item 5). Recorded interest receipts by PFP from its borrowers, albeit only two-thirds of that implied by the loan portfolio and delinquency rates, is \$13,506. The profit and rent calculation is the evaluator's "disposable income" per firm (sales less purchased materials, wages, taxes, fuel, transportation and loan repayment) times a standard set of coefficients that cover the number of firms, duration since receipt of the loan (1.6 years), a .5 time adjustment reflecting a gestation period before the loan produces its effects and a failure rate correction. The sample's failure rate for abandoned or bankrupt ventures was 16.2% as against 28.8% for the 313 clients. A training benefit is calculated at half the average wage rate per new apprentice. Finally, the opportunity cost of labour is taken as the actual cost of paid workers, the average wage rate per apprentice and one-and-a-third the average wage per entrepreneur, for a total of \$32,239.

In the maximum case we estimate interest payments at what they should have been, given the 10% interest, the size of the portfolio and the delinquency rate. To the "disposable income" gain of \$475 per client we add back a conservative allowance of \$260 for repayment of principal ("retained earnings") and taxes, both of which are properly part of gross profits. We assume that only the entrepreneur has an opportunity cost. Then we add in those benefits that we apply in the "maximum" and "most likely" cases: an income distribution weight of 1.5 to direct income, external economies and a diversion benefit. Note that the gain from price reductions is equal to all other benefits combined.

Table 3.3

PfP/UV Loan Portfolio and Lending Costs  
(1981 US dollars)

	(1)	(2)	(3)	(4)
	<u>Loans Paid Out</u>	<u>US Price Inflater (1981=100)</u>	<u>L.P.O. at 1981 Prices</u>	<u>Loans Out-Standing</u>
1977*	-	136	-	-
1978	22,917	134	30,709	15,355
1979	91,677	121	110,917	70,814
1980	91,677	107	98,084	104,501
1981**	68,751	100	68,751	83,418
	<u>275,002</u>		<u>308,461</u>	<u>274,088</u>

	(5)	(6)	(7)	(8)
	<u>% of all L.O.</u>	<u>Bad Debt</u>	<u>AID Expenditure Current Prices</u>	<u>1981 Prices</u>
1977*	-	-	32,264	43,879
1978	5.7%	358	12,852	172,633
1979	25.8	1,620	128,853	155,912
1980	38.1	2,393	128,853	137,872
1981**	30.4	1,909	96,589	96,589
	<u>100.0</u>	<u>6,280</u>	<u>515,411</u>	<u>606,915</u>

	(9)	(10)	(11)	(12)
	<u>U.V. Inflation</u>	<u>Capital Erosion Index</u>	<u>Capital Erosion</u>	<u>Total Cost</u>
1977*	30.0%	.231	-	43,879
1978	8.2	.076	1,167	174,188
1979	15.0	.130	9,206	166,738
1980	12.3	.110	11,495	151,760
1981**	7.5	.070	5,839	104,31
			<u>27,707</u>	<u>640,902</u>

Notes

\* Last quarter only.

\*\* First three quarters.

(1) Goldmark, et al, p. 1.

(2) IMF, International Financial Statistics.

(3) (1) x (2)

Notes (continued)

- (4) Average maturity of one year based on the year mid-point applied to (3).
- (5) Calculated from (4).
- (6) Goldmark, et al, pp. 4, 68.
- (7) Goldmark, et al, p. 28.
- (9) IMF, International Financial Statistics.
- (10)  $1 - (1/1 + \text{inflation rate})$
- (11) (4) x (10)
- (12) (6) + (8) + (11)

Because we believe the maximum case is indeed a fair estimate of the benefits associated with the sales increase of the client firms, the major change in the most likely case is a judgment about what portion of that increase is attributable to the loan finance and technical assistance. Goldmark et al were convinced that the completion of a major road, greatly facilitating access to surrounding villages, was a significant element in the expanded level of business activity. As we noted in Chapter II in the discussion of causality, a self-financed sales expansion would most probably have entailed sizable opportunity cost. If we generously assume that half the sales increase is attributable to the new road and that without loan finance the direct and indirect output lost elsewhere would have been 50% of the gain, our most likely estimate would be 75% of the maximum case. This is the reduction factor we have applied to most of the benefit components.

The summary of our benefit-cost calculations is presented in Tables 3.4 and 3.5. The dominant benefit, one not noticed by either PFP or the evaluation team, is the price reduction enjoyed by consumers. The project is marginal, yielding an internal rate of return of 1 1/2%. Although benefits exceeded costs by only 1% the major damage was done by the year-long "delay" in the start-up of lending operations. In the case of Peru (Chapter VII) benefits exceeded costs by 3%, but, because lending commenced almost immediately, the internal rate of return was 136%.

Table 3.4

PfP/UV Benefit Synopsis

(1981 US dollars)

	<u>Minimum Case</u>	<u>Maximum Case</u>	<u>Most Likely Case</u>
Wages	-2,880	-2,880	-2,160
Interest	13,506	21,725	17,615
Profit, rent	101,099	156,437	117,328
Training benefit	2,874	2,874	2,156
Distributional weight		87,641	65,731
<u>less</u>			
Opportunity Cost of labour	-32,239	-29,372	-22,029
External Economies			
Final demand linkage		42,138	31,604
Backward Linkage		89,082	66,812
Consumer Benefit		457,755	343,316
Diversion Benefit		27,500	27,500
 Total Benefit	 82,360	 852,900	 647,873
 Total Cost:		640,902	
Direct Cost:	613,195		
Capital Erosion	27,707		

I. Minimum Case

1. Wage Value Added (change in paid employment x average wage)

a. Paid Employment

from Table VI-7 p. 95: new employees per enterprise = .34 person years consisting of .23 entrepreneurs + .09 unpaid family workers + .11 salaried employees + .06 apprentices + (-.14) short-term workers.

Entrepreneurs, unpaid family workers and apprentices paid out of "disposable income."

Additional remunerated employees = .11 salaried workers + (-.14) short-term workers = (-.03) person per year per firm.

(-.03) person per year x 313 client firms x .85 failure adjustment x 1.6 years average time in program x .5 time adjustment = -6.4 person years.

b. Wage value added

-6.4 x \$1.50 per day x 300 days/year = -\$2,880

2. Interest (paid prior to profit)

2,931,396 FCFA + 40,00 FCFA (Table IV-6 and p. 59) at an exchange rate of 220 FCFA per \$ = \$13,506

3. Profit & Rent

Average profit ("disposable income") of sample firm at date of evaluation = \$1,796 (p. 58). Increase in profit since initial contact = 36% (p. 90).

Initial profit per firm = \$1,796 1.36 = \$1,321  
Increase in profit = \$1,796 - \$1,321 = \$475  
average firm in program 3.2 years/2 = 1.6 years

\$475 per client year x 313 clients x .85 failure rate x .5 time adjustment x 1.6 years = \$101,099.

4. Training Benefit = change in apprentices x .5 average wage.

.06 apprentices x .5 (\$1.50) x 300 days x 313 x .85 failure rate x .5 time adjustment x 1.6 years = \$2,874.

5. Opportunity cost of labour

New apprentices at \$450 per year =  $.06 \times 313 \times .85 \times .5 \times 1.6 = \$5,747$

Paid workers = -\$2,880 (the reduction in wage labour permitted the workers to earn the going wage elsewhere).

Entrepreneurs at \$600 per year =  $.23 \text{ new entrepreneurs per client} \times \$600 \times 313 \times .85 \times .5 \times 1.6 = \$29,372$

6. Total Benefits = wages + interest + profit, rent + training benefit - opportunity cost of labour.

$(-\$2,880) + \$13,506 + \$101,099 + \$2,874$   
 $-(\$5,747 + \$29,372 - \$2,880) = \$82,360$

II. Memorandum Items

1. Unrecoverable Loans

-at end of Phase I: total value outstanding =  
20,934,296 FCFA, or  
\$69,781 in 1981 rates (Table IV-9, p. 68)

4)

-of all loans outstanding, 9% are unrecoverable (p.

-Unrecoverable loans =  $.09 \times \$69,781 = \$6,280$

2. Technical Assistance:

-staff of 7 = 2 expatriate advisors, 5 Voltaics

-90% of 313 clients received some TA visits (p. 73)

$.9 \times 313 = 282 \text{ clients}$

-few learned the techniques initially conveyed

-almost none used the techniques initially conveyed

-in regard to the modified techniques, 26% of the

surveyed clients rated the TA as aiding their operations more than the loan

III. Maximum Case

1. Wage value added

Same as minimum case: -\$2,880

2. Interest

Based on total loans of \$275,000 at average maturity of one year at 10% interest and 21% delinquency rate (p. 63, loan value delinquent 6 months or more).  $.10 \times \$275,000 \times .79 = \$21,725.$

3. Profit and Rent

Change in "disposable income" as in minimum case plus an allowance for repayment of principal and taxes.

Average loan size is \$670.

$\$475 + \$250 + \$10 \times 313 \text{ client firms} \times .85 \text{ failure rate} \times .5 \text{ time adjustment} \times 1.6 \text{ years} = \$156,437.$

4. Training Benefit

Same as minimum case = \$2,874

5. Distribution weight: a 1.5 weighting (50% increment) of income received by the bottom 30% in the national income distribution applied to all direct value added:

$(-2,880) + \$21,725 + \$156,437 \times .5 = \$87,641$

6. Opportunity Cost of labour

New entrepreneurs only: as in the minimum = \$29,372

7. External Economies

a. Final demand linkage =  $.2 \times (\text{disposable income} + \text{one quarter of expatriate salaries and housing expenditure}) = .2(\$156,437 + \$54,255) = \$42,138$

b. Backward linkage = Incremental sales less value added of all non-trading firms adjusted for a 70% opportunity cost of labour and foreign exchange.  
 $\$1,113 - \$484 \times 202 \text{ firms} \times .70 = \$89,082.$

c. Consumer benefit: change in the real price of a good, applied to the total volume of goods sold  
 $(Q_0 \times \Delta P) + (\Delta Q \times 1/2 \Delta P).$

$Q_0 = \$4,706 \text{ initial annual sales} \times 313 \text{ firms} \times .85 \text{ failure adjustment} \times 1.6 \text{ years} = \$2,003,750 \text{ at 1981 prices.}$

$\Delta Q = \$2,683 \text{ increase in annual sales} \times 313 \text{ firms} \times .5 \text{ time adjustment} \times .85 \text{ failure rate} \times 1.6 \text{ years} = \$571,050.$

$\Delta P^* = -25\%$

Calculated as follows  $\Delta P = (1-R_0) + [(1-R_0) \times R_n / (1-R_n)] - 1.$

where  $R_0 = \text{Value added}_0 / \text{Sales}_0 = \$2,599 / \$4,706 = .55$

$R_n = \text{Value added}_n / \text{Sales}_n = \$2,937 / \$7,389 = .40$

$P = (1-.55) + [(1-.55) \times (.40 / 1-.40)] - 1 = -.25.$

$$Q_0 \times \Delta P = \$2,003,750 \times .25 \times .5 \text{ time adjustment} \times 1.6 \text{ years} = \$400,750.$$

$$\Delta Q \times 1/2\Delta P = \$571,050 \times .125 \times .5 \text{ time adjustment} \times 1.6 \text{ years} = \$57,105$$

$$\text{Consumer benefit} = \$400,750 + \$57,105 = \$457,755.$$

8. Diversion benefit

Assume that of the 30% of loan projects "failed or abandoned" funds were diverted to consumption or other uses in one-third of the cases, with benefits equal to 10% of loans made.  $\$275,000 \times .10 = \$27,500.$

9. Total Benefits = wages + interest + profit, rent + training benefits + distributional benefit + external training benefits + diversion benefit - opportunity cost of labour,

$$(-\$2,880) + \$21,725 + \$156,437 + \$2,874 + \$87,641 + (\$42,138 + \$89,082 + \$457,755) + \$27,500 - \$29,372 = \$852,900$$

IV. Most Likely Case

1. Wages: 75% of maximum case =  $-\$2,880 \times .75 = -\$2,160$

2. Interest: splitting the difference between the \$13,506 recorded in PFP's somewhat haphazard accounts and the \$21,725 that should have been collected = \$17,615

3. Profit, Rent: 75% of maximum case =  $\$156,437 \times .75 = \$117,328$

4. Training benefit: 75% of maximum case =  $\$2,874 \times .75 = \$2,156$

5. Distribution weight: 75% of the maximum case =  $.75 \times \$87,641 = \$65,731$

6. Opportunity cost of labour: 75% of the maximum case =  $.75 \times -\$29,372 = -\$22,029$

7. External Economies

a. Final demand linkage: 75% of the maximum case =  $.75 \times \$42,138 = \$31,604$

b. Backward linkage: 75% of the maximum case =  $.75 \times \$89,082 = \$66,812$

c. Consumer benefit = 75% of the maximum case =  $.75 \times$   
 $\$457,755 = \$343,316$

8. Diversion Benefit: same as maximum case = \$27,500

Table 3.5

Internal Rate of Return Calculation

	(1)	(2)	(3)	(4)	(5)
	<u>Benefit</u>	<u>Costs</u>	<u>Net Benefit</u>	<u>1 1/2% Discount Factor</u>	<u>Discounted Net Benefit</u>
1977	-	43,879	-43,879	1.000	-43,879
1978	36,929	174,188	-137,259	.9852	-135,228
1979	167,151	166,738	413	.9709	401
1980	246,840	151,760	95,080	.9563	90,925
1981	196,953	104,377	92,616	.9422	87,261
	<u>647,873</u>	<u>740,902</u>	<u>6,971</u>		<u>520</u>

Notes

- (1) Most likely benefits over project life distributed by column (5) of Table 3.3.
- (2) Column (12) of Table 3.3.
- (3) Column (1) - (2).
- (4)  $1/(1 + .015)^t$
- (5) Column (3) x (4).

#### Chapter IV. UNO BRAZIL

The Northeast Union of Assistance to Small Businesses (UNO) was created in 1972 by the U.S. private volunteer organization AITEC, with the support of important members of the local business community, from which the board of directors was recruited.\* Local private sector interest in UNO, though initially substantial, waned within a short span of time. Donations from this sector equalling one quarter of total funding during the first few years, fell to almost nothing thereafter. The evaluator suggested that the private sector saw the public support which UNO did successfully obtain as being permission to withdraw, and also that the private supporters were disappointed when the international funding hoped for by the AITEC did not quickly materialize. It can also be noted that the waning of support from local banks was coincidental with the eclipse of the influence of that director of the Central Bank who was a strong UNO advocate. Ultimately, the private sector saw UNO's work as taking care of the poor, a role which was considered to be most appropriate for the State.

The first step after the establishment of UNO was to obtain the participation of banks as intermediaries for the onlending of public sector credit funds. UNO, as originally conceived, was to select clients and recommend them to the banks, who would then process and disburse the loans. As interest charges were to accrue to the banks and not to UNO, (UNO received a 1% commission which was insignificant in relation to operating cost), UNO was never conceived of as generating its own income, but rather, as channeling funds lent or donated by the public sector and international sources. Two private banks and the state development bank of Peruambuco (BANDEPE), agreed to channel credit for UNO. Although BANDEPE was subject to credit decisions which were sometimes governed by the strength of its local political connections, this also provided influential support for UNO's cause. UNO's collaboration with the private banks worked well; however, UNO found itself forced to terminate their participation in the program when the Brazilian government lifted ceilings on commercial bank interest rates, allowing rates to reflect the thirty percent inflation rate and to increase (by more than a third) from 25 to 35 percent. Believing that such

---

\* Based primarily upon the evaluation report by Judith Tendler, Ventures in the Informal Sector and How they Worked Out in Brazil (March 1983)

an increase would be too hard on small businesses, UNO decided after 1977 to work only through the state bank, which had maintained a 25 percent ceiling.

In the late 1970's, UNO started to be recognized at national and international levels. Up until 1979, UNO strengthened local foundations and formally separated itself from AITEC. This separation was caused by (a) UNO's dissatisfaction with the quality of technical assistance which, as part of its AITEC support, it had to purchase from AITEC; and (b) UNO's concern that a close association with a U.S. organization like AITEC would be detrimental to the procurement of domestic funding.

From 1978 onward, primarily as a result of its discovery by the World Bank and subsequent inclusion as a "micro-firm component" in three of their development projects, UNO experienced a rapid increase of funding. World Bank funding was \$400,000 in 1981. Concurrent with this increased interest from the international sphere was the increased participation and attentiveness of the national public sector. Funding from the Brazilian government hovered around \$50,000 until 1978 then jumped to above \$200,000, thereafter, partly in response to the need for domestic credit commitments complementing the World Bank project, and partly out of a new interest by the Brazilian government in the micro-business sector.

#### Program Implementation

UNO is operated by a completely local and highly dedicated staff, made up of students and permanent staff. The former are work-study undergraduates who are specializing in a wide variety of fields ranging from literature and psychology to the social sciences. Interestingly, graduates in business administration are shunned. Over the nine years of 1973 to 1981, UNO has employed 105 full-time equivalent students,

---

1 "Cheapness is not the only reason that student workers are valued for micro firm-credit programs. UNO also likes to use students because of the learned bias it encounters in better-trained professionals against the rustic production and management techniques of its client firms. Business administration graduates, UNO feels, are particularly "handicapped" by their training, having only inappropriate advice or contempt for UNO's client firms; or, according to the PISCES evaluators, "they become easily bored with the day-to-day problems of the informal sector" (PISCES 1981: 171). "The last thing we need," UNO says, "is a Master in Business Administration!" Students, in contrast, are felt to be still young enough to be socialized to another norm. And UNO screens

averaging 12 FTE students per year, with the number of student-workers having risen each year. In 1980, this figure was 19 FTE students.

Much of the permanent staff is comprised of ex-student workers who have decided to remain with UNO. With the use of permanent staff as field workers in the interior program, beginning in 1978, the number of UNO professionals has greatly increased and totaled 48 FTE in 1980. In addition to this personnel are the director and the administrative support staff. Although the personnel expenditure equals roughly 85 percent of the total project costs, UNO's professional salaries are only 50 to 75 percent that of the public sector and are without its accompanying job security. Most of the permanent staff find ways of earning income from additional activities, as do many public sector professionals and university professors. The wage of student workers is 70 percent of the salary of a permanent employee (without fringe benefits) or \$5 per half day.

The use of student workers is thought to be advantageous as staff size can then be tailored to match the expected demand for credit. The student workers in Recife perform the legwork of the program. Most of their time is devoted to the client selection process, with only 5 of the 38 students in 1981 involved in the monitoring of the loans. Until 1981, this selection process had four stages, with each requiring the collection of considerable new information. In the first stage, a census of micro-firms in a particular neighborhood would be taken. This enabled UNO to both know and to be known by the micro-firm sector, and thus, to reach firms with the least access to credit as well as to keep larger firms away from the program. The next stage was the selection visit to a firm to determine its eligibility and interest in the program. The third step, the diagnosis of the firm, was for the detailing of the firm's "costs and outlays, assets and debits." The final stage, the account building process, involved the most comprehensive drafting of the firm's records. Although this final stage was a pro forma requirement:

---

(footnote continued from previous page) its students carefully for commitment and ability to feel at ease in poor urban neighborhoods, as well as for skill and intelligence. A selected group of applicants is given three weeks of training and only after the first week is the final screening made. Self-selection, in UNO's eyes, also makes the student workers more suitable. University students who work are said to be some of the student workers to have grown up in the neighborhoods where UNO lends, which makes them comfortable and more knowledgeable about working there." Tendler, P. 50

of the participating banks, its main function was to enable UNO to pare down loan size to a realistically estimated need.

In 1981, this lengthy process was finally shortened by collapsing the last three stages into one. As a result of this loan productivity was increased and unit costs fell. Completed loan proposals per firm censused rose from 28 to 50 percent, as the shortening of the time between initial contact and loan approval caused fewer prospective clients to lose interest in the program. Productivity per full-time equivalent worker also rose from 18 loans in 1980 to 24 loans in 1981, and is expected to rise to 40 in 1982. Costs per loan dropped from \$1,160 in 1980 to \$733 in 1981. Productivity was additionally boosted just prior to this period through two changes. First, the resolution of the processing delays occurring with BANDEPE, which caused clients to withdraw their applications, lifted the number of loans disbursed per completed application up from 65 percent in 1980 to almost 100 percent in 1981.

UNO pursues a conservative lending policy, specifically targeted to established micro-firms. UNO sees itself as helping these firms to survive, rather than to expand. The criteria are as follows: firms owners have less than five employees (12 for manufacturing); the firm owner is visably a "lower-class" person who spends the major part of his time working in the firm which is located in a "popular" neighborhood; annual owner family income is less than \$8,900; annual sales are less than \$45,000 (\$62,000 for manufacturing); the firm is at least 3 to 6 months old and is located in a lower class neighborhood. Loan size is limited to \$3,000.

UNO's nominal interest rate to borrowers is 25 percent. Other charges in the form of deduction from principal prior to disbursing to the borrower are a 3 percent commission to UNO, a 2 percent commission to the bank, a 2 percent insurance premium and a banking tax. Loans for working capital are repayable in 12 to 15 months, with a grace period of 3 months; loans for fixed capital are repayable in up to 36 months, with a grace period of 6 months. All loans require a co-signer, a common practice in Brazil. Although UNO does not refinance delinquent loans, short-term delays are tolerated as delinquency procedures begin only after payment is 3 months overdue. The deliquency fine of 1 percent per year of loan value is also quite light.

UNO provides technical assistance to its clients in the form of a series of courses to firm owners in a particluar neighborhood. Each course lasts 2 weeks and consists of four modules: basic management, transactions with banks, basic bookkeeping, and sales promotion. These courses, which have an average attendance of 15, are not mandatory and are open to non-clients, who generally represent 5 percent of those

participating. The courses are conducted by the permanent staff. According to UNO, the cost of these courses and other educational activities was 30 percent of the operating budget. In addition to these courses, students often give advice during their visits in regard to management and bookkeeping, but not the production process.

### Program Impact

Through 1981, a total of 2,552 loans were disbursed to 2,016 clients. Of this, 1,680 were made in Recife, with the remainder of 872 being made through the interior program. The total number of Recife micro-firms receiving UNO credit was only 4 percent of the potential client population. There have been 536 repeat loans, typically going to the most successful clients. As a proportion of loans given in any year, repeat loans have varied from a high of 39% in 1977 to a low of 14% in 1981. The value of all loans is \$4,626,300. Three-quarters of the loans were for working capital; finance for fixed investment has usually been for improvement of premises. No new firms or activities were given loans.

The total costs of the program through 1981, exclusive of the bank's processing costs, was \$3,187,400. The evaluator speculates that the cost to the participating banks was low as UNO bore most of the paper work and all of the leg work. The average loan size until 1979 was \$2,000, at an administrative cost of \$1,700 per loan. In 1981, during which 39 percent of all loans were granted, loan size dropped to \$1,604, at a cost of \$733 per loan. Over the entire period, the average loan disbursed was \$1,813, at a cost of \$1,249.

The repayment rate was estimated between 92 and 98 percent. Several elements help to explain such high repayment rates. Almost all of UNO's clients use the Brazilian system for consumer credit, SPC; any incident of delinquent payment reported to the SPC cuts-off both bank and consumer credit. Second, there is the desire for repeat loans. And, of course, inflation greatly eases the repayment burden.

A total of 289 loans had been paid out of the guarantee fund by the end of 1980, of which 197 were not ultimately repaid by the borrower (13 percent of the total loans made up to that date). Extrapolated through 1981, the total principal not returning to the banks' credit funds would be \$587,159.

The technical assistance courses and student advice have had little impact on the clients. During the 1980-1 period, UNO reported that 38 percent of its clients attended the courses. The evaluator's data suggested a much smaller percentage. Many of the clients did not attend because they did not know of the courses. Of those attending, many stated

that they did so only to show good faith during the processing of their application. Few of the participating clients found the courses of any value. The information covered was excessively general, and hence, had little applicability to their individual concerns. Few of the clients used the techniques, and often, the techniques were used simply to please UNO. The student advice was formulaic and was rarely put into practice because it was perceived as being either time-consuming or inappropriate.

Of the 2,016 clients serviced by UNO, 71 percent had never had bank credit. Yet because of UNO's establishment as a credit institution for micro-firms, most of the 29 percent who had previously qualified for formal credit may have been subsequently refused by these formal institutions and sent to UNO. This form of 'reverse graduation' may explain the broad discrepancies in the estimated number of clients who graduated from UNO. During the period of 1973-9, UNO reported graduation rates of 49 and 37 percent. Yet in Tendler's sampling of clients and in her discussions with UNO, the number of clients who graduated appears to be quite small.

The average UNO client has little or no education, is male in 85% of the cases, and is in his forties or fifties. Most of UNO's clients had worked in medium and small-scale modern industries prior to their current enterprises. Most of these clients left voluntarily; some, as is common in Brazil, got themselves "fired" upon quitting so as to collect the accompanying severance pay which was often used as their initial start up capital.

Roughly half of UNO firm owners earned between 2 and 5 times the minimum wage and for another third of UNO firm owners household income was more than 5 times greater. When comparing UNO clients to other income earners in the Greater Recife area, the UNO clients are found to be among the top 30 percent, with over half of the UNO clients in the top 16 percent. When comparing UNO firm owners to the 1981 FIDEM survey of Recife micro-firms, it is found that the UNO clients are at the higher end of the local micro-firm owner distribution. Over three-quarters of UNO firm owners reported that they did not have other sources of income. While 14 percent of UNO clients gained additional income through property rent, and 7 percent gained income through social security payments, almost all of the FIDEM owners had no outside income. Also, while 38 percent of UNO firm owners contributed 16 percent of their income as independent subscribers to social security and health insurance, this compared to only 3 percent of FIDEM firms owners. In addition, while 25 percent of the UNO-assisted firms had average sales of less than \$5,400, as much as 72 percent of the FIDEM sampling had sales below this level. Finally, while FIDEM family firm income averaged 2.5 times the minimum wage, 50 percent of UNO firm owners were above this level.

Additionally, UNO firms had a lower than normal representation of loans to female-headed firms, with such firms typically indicating the lower end of firm distribution.

Data on 500 UNO borrowers and would-be borrowers is shown in Table 4.1. The "number engaged" figure includes the entrepreneur. Retail trade is the largest activity, of which about half are retail food stores. The 24% manufacturing includes 7% mixed service/manufacturing and 3% mixed retail/manufacturing. Approximately half of these establishments were unregistered "clandestine" firms paying no sales tax, no profit tax and no payroll tax.

Table 4.1

Characteristics of 500 UNO Firms 1979\*

	<u>No. Engaged per firm</u>	<u>Share of UNO Loans</u>	
Retail	2.4	42%	Average Sales: \$17,224
Manufacturing	4.5	24%	Ave. Loan size: \$2,000
Service	3.0	34%	One-man firm: 41%
			Located in home 39%
			Unregistered 75%
			Male head 85%

\* The 500 firms are not a sample, but represent all firms in Recife for which UNO prepared loan proposals between April 1978 and August 1979.

From conversations with UNO clients and staff, the evaluator's impression was the majority of UNO's client firms did not grow or increase productivity as a result of their loans. The major loan effect (with some significant exceptions) was a decrease in costs of a roughly stationary volume of business, and hence, an increase in profits. Costs fell as the subsidized UNO loan substituted for informal credit which is lent at rates of 200 to 400 percent. Additionally, the loans enabled materials and goods to be purchased in greater bulk at the lower costs. The profits, however, did not seem to be used to increase sales levels or change the

production process but were used for reinvestment in working capital and for consumer expenditures that improved living standards (e.g., housing and education). The only figures which exist in the evaluator's work are on firm performance are with respect to the retail food stores. These figures suggest that although the gross profit and the imputed wage of the firm owner as percentages of sales increased from 22 to 26 percent and from 8 to 11 percent respectively, the absolute value of sales decreased from \$3,800 to \$3,100 per month, as did the gross profit (from \$974 to \$657 per month) and the imputed wage of the firm owner (from \$228 to \$195 per month).

It appears, however, that these decreases in the absolute levels of value added are a recent occurrence, owing to the sharp recession in the Brazilian economy during 1980-1981. Another report on UNO (Coelho 1980), for example, found that the value added per assisted firm increased between 1977 and 1979 at 16.4 percent per year. The absolute level of value added (equivalent to the evaluator's "gross profit") rose from \$2,948 to \$4,524 per year.<sup>1</sup> Non-assisted firms in the Coelho sample also experienced an increase in annual value added, as it climbed at a rate of 10.1 percent per year from \$2,735 in 1977 to \$3,691 in 1979.

From data collected by UNO for the period 1973-80, typically several months after receipt of the loan, 1.6 new jobs are created by each loan. Tendler's own interviews and a study she cites (Fuenzalida and Coelho, 1980) indicates that these job increases do not persist much beyond the loan period. However the latter study found that UNO loans appear to save jobs: over a 2 1/2 year period 112 UNO firms suffered a net reduction in employment of 5% versus a reduction of 37% in a matched sample of 91 unassisted firms.

Finally the evaluator found no evidence that the lower interest cost was passed along to the consumer in the form of lower prices. This is not surprising since UNO firms are an insignificant factor in the vast markets in which they are competing.

Table 4.2 presents data on the loan portfolio and the cost of lending. The cost of lending consists of three elements: direct UNO expenses, bad debt and capital erosion owing to inflation.

---

<sup>1</sup> These figures were reported in 1979 CR\$s and are adjusted to 1st Quarter 1980 US\$'s, so as to be comparable to the average sales figure of \$17,227. 1979 CR\$'s are increased by the change in the CPI from the 1979 year average to 1st Quarter 1980, then are converted in US\$'s with the 1st Quarter 1980 exchange rate.

Table 4.2

UNO Loan Portfolio and Lending Costs  
(thousands of 1981 U.S. dollars)

	(1)	(2)	(3)	(4)	(5)
	<u>Loans Paid Out</u>	<u>Loans Out- Standing</u>	<u>% of All L.O.</u>	<u>Bad Debt</u>	<u>UNO Expenses</u>
1973	127.5	63.8	1.2%	7.0	154.6
1974	491.2	373.1	6.8	39.9	254.1
1975	546.9	786.3	14.4	84.6	246.1
1976	259.0	759.9	13.9	81.6	273.4
1977	307.8	505.9	9.3	54.6	225.5
1978	255.0	479.3	8.8	51.7	318.9
1979	331.9	218.3	4.0	23.5	434.2
1980	696.3	723.4	13.2	77.5	545.1
1981	1,610.7	1,558.1	28.5	167.4	735.5
	<u>4,623.3</u>	<u>5,468.0</u>	<u>100.0</u>	<u>587.2</u>	<u>3,187.4</u>

	(6)	(7)	(8)	(9)	(10)
	<u>Inflation Rate</u>	<u>Capital Erosion Index</u>	<u>Capital Erosion</u>	<u>Direct Costs</u>	<u>Total Cost</u>
1973	12.8%	.113	7.2	161.6	168.8
1974	27.6	.216	80.6	294.0	374.6
1975	28.9	.224	176.1	330.7	506.8
1976	42.0	.296	224.9	355.0	579.9
1977	43.7	.304	153.8	280.1	433.9
1978	38.7	.279	133.7	370.6	504.3
1979	52.7	.345	75.3	457.7	533.0
1980	82.8	.453	327.7	622.6	950.3
1981	105.5	.512	797.7	902.9	1,700.6
			<u>1,977.0</u>	<u>3,774.6</u>	<u>5,751.5</u>

- Notes:
- (1) Tendler, p. 144
  - (2) Average maturity of 1.67 years applied to (1) based on the year mid-point.
  - (3) Calculated from (2).
  - (4) Tendler, p. 74, distributed by (3).
  - (5) Tendler, p. 144.
  - (6) IMF, International Financial Statistics.
  - (7)  $1 - 1/1 + \text{inflation rate}$ .
  - (8) (2) x (7)
  - (9) (4) + (5)
  - (10) (8) + (9)

Turning to the construction of the three benefit estimates, in the minimum case we take UNO's figure of 1.6 new jobs per loan and assume job duration of one-half year. In the maximum case we assume the transitory jobs last for a full year and we add in jobs saved. In both cases profits move in step with wage value added. In general, with a fairly sparse information base, all the elements of the maximum case are estimated conservatively. An exception is the diversion benefit, which is placed at 50% of the value of all loans issued. The magnitude of this guesstimate is based on two factors: (a) Tendler's comments that entrepreneurs did not seem strongly motivated to expand their designated activities, and (b) the return on risk-free, work-free savings deposits ranged from double to quadruple the 25% interest that UNO borrowers were paying and for many must have represented a superior alternative investment.

The "most likely case" is essentially the minimum case plus the jobs saved. We stick with the maximum case guesstimate as to the size of the diversion benefit.

The final benefit-cost measure - the internal rate of return - is calculated in Table 4.4. As with the other high-inflation country, Peru (Chapter VII), the diversion benefit is critical in pushing total benefits beyond total cost. The high 310% internal rate of return occurs in large part because of the very quick start-up time vis-a-vis PfP.

Table 4.3

UNO Benefit Synopsis  
(1981 US dollars)

	<u>Minimum Case</u>	<u>Maximum Case</u>	<u>Most Likely Case</u>
Wages	\$748,470	2,137,843	1,302,665
Interest	1,535,045	1,617,066	1,535,045
Profit, Rent	1,033,560	2,955,982	1,798,394
Training Benefit	38,430	109,767	66,885
Distribution Weight <u>less</u> Opportunity of Labor	- (-748,470)	267,230 -	162,832 (-976,999)
External Economies			
Final Demand Linkage	-	1,018,765	620,212
Backward Linkage	-	1,830,055	811,355
Consumer Benefit	-	-	-
Diversion Benefit	- 2,607,035	2,311,650 12,248,358	2,311,650 7,632,039
Total Costs		5,751,500	
Direct cost	3,774,600		
Capital Erosion	1,977,000		

I. Minimum Case\*

1. Wage Value Added: new employment x average wage

- a. Employment: total jobs created 1973-1981 = 1.6 jobs per loan x 2,552 loans x average duration of six months = 2,042 person years. [pp. 112, 113, 144]

less two-year reduction in net employment of 5% [p. 113; the reduction results from a 20% failure rate among firms; the survivors increased their permanent employment by .5 workers]. The average number of employees per firm, including unpaid family members, is 2.1 [p. 15].

2,016 firms x 2.1 employees x (-.05) x 2 years x .5 time adjustment = -212 person years.

Total employment = 2,042 - 212 = 1,830 person years.

- b. Average Wage: from the 1980 UNO sample of 500 firms [p. 104] we have the following statistics.

22% unpaid (mostly family members)  
48% earned less than minimum government monthly wage of \$54 - say \$40  
23% received \$54 per month  
7% received \$54 per month plus benefits - say \$67

Average wage = .22(0) + .48(12 x \$40) + .23(12 x \$54) + .07(12 x \$67) = \$409 per year

- c. Wage Value Added = 1,830 person years x \$409 = \$748,470

2. Interest, Profit, Rent

- a. Interest: see Memorandum Items

\$1,257,647 + fees of \$277,398 = \$1,535,045

- b. Profit: a transitory increase in entrepreneurial income in the same proportion as wage value added, or equivalent of one-quarter of one year's earning per loan. Average entrepreneurial earnings given as \$1,620 per year [p. 147].

2,552 loans x \$1,620 x .25 = \$1,033,560

\*All citations of page and table numbers refer to the Tendler report.

3. Training Benefit

- a. No information is provided as to training or apprenticeship or the later occupation of departed workers. In order to avoid liability for severance pay, clandestine firms (about half) employ young unskilled workers and seldom retain them beyond a year [p. 142].
- b. For one-half of unpaid employees and those earning less than the minimum wage (i.e., 1/2 of 70%) we assume a \$5 a month training benefit.

4. Opportunity Cost of Labour

Equal to the actual wages paid = \$748,470.

II. Memorandum Items

1. Interest and Fees

- a. Total loans issued \$4,623,300 on which the borrower paid a one-time fee of 2% Bank commission, 2% commission to UNO and a 2% insurance premium:  
 $\$4,623,300 \times .06 = \$277,398.$
- b. In the minimum case we assume 92% [p. 6] of the loans outstanding [see our Table 4.2] earned 25% interest per annum.  $\$5,468,031 \times .92 \times .25 = \$1,257,647$  [p. 6]
- c. In the maximum case, we assume 98% [p. 6] of loans outstanding earned interest.  
 $\$5,468,031 \times .98 \times .25 = \$1,339,668$

2. Bad Debt

- a. Tendler's data are inconsistent. On page 5 it is reported that through 1981, 98 loans (3.8%) had to be repaid from the guaranty fund; on page 74 the number is given as 289 of which 197 were ultimately not recovered by the Fund through 1980. This latter figure implies a bad debt ratio of 12.7%. This does not square with the 92-98% loan repayment statistic.
- b. In the minimum case we assume 12.7% of loans issued are unrecoverable (we have no information about loan size in this matter).  
 $\$4,623,300 \times .127 = \$587,159$

- c. In the maximum case we assume 98 or 3.8% bad loans.  
 $\$4,623,300 \times .038 = \$175,685.$

### III. Maximum Case

#### 1. Wage Value Added

- a. Employment: same as minimum case except job duration is increased from 6 months to 12 months and jobs saved are also counted. Fuenzalida and Coelho report that 112 UNO firms lost 5% of their net employment versus a 37% reduction for 91 unassisted firms over a two year period [p. 116].

Net transitory employment: 2,042 person years x 2 -  
212 person years lost to 5% net reduction = 3,872  
person years.

Total person years = 3,872 + 1,355 = 5,227

- b. Wage Value Added: \$409 average wage (from minimum case) x 5,227 person years = \$2,137,843

#### 2. Interest, Profit, Rent

- a. Interest:  $\$277,398 + \$1,339,668 = \$1,617,006$  [from Memorandum Items].
- b. Profit: same procedure as minimum case, in which the profit increase is proportional to the employment increase, or 2.86 times minimum case profits = \$2,955,982.

#### 3. Training Benefit

1. Same procedure as minimum case, but applied to the larger employment.  
 $5,227 \text{ person years} \times .35 \times \$60 = \$109,767$

#### 4. Distributional Weight

- a. Tendler reports that a large portion of the employees of clandestine firms (half of the total) are old, handicapped and would not otherwise obtain employment [p. 143]. We apply the 1.5 income distribution weight to one-quarter of the wage bill.  
 $\$2,137,843 \times .25 \times .5 = \$267,230$

5. External Economies

- a. Final Demand Linkage =  $.20 \times (\text{wages} + \text{profit})$ .  
 $.20(\$2,137,843 + \$2,955,982) = \$1,018,765$
- b. Backward Linkage: purchased inputs x trading firm adjustment x adjustment for import content and opportunity cost of labor.

From Coelho, UNO 1980, Tables 2.4 and 4.4, we estimate an annual differential sales increase of \$1,834 per UNO firm relative to the unassisted firms. Sales - Value Added = Purchased Inputs.

$$\begin{aligned} & \$1,834 \times 2,016 \text{ firms} \times 2 \text{ years} + (222 \text{ firms saved} \times \\ & \$17,224) - (\$2,137,843 + 2,955,982 + \$1,617,066) = \\ & \$11,218,416 - \$6,710,891 = \$4,507,525 \end{aligned}$$

42% of loans went to trading firms whose trade goods are excluded. It is assumed that 30% of net purchased inputs represents import content and the opportunity costs of labour.

$$\$4,507,525 \times .58 \times .7 = \$1,830,055.$$

- c. consumer Benefits: no reported price reductions = 0

- 6. Diversion Benefit: Three factors - a low value added response per loan dollar, alternative returns to placing the loan proceeds in a savings bank ranged from 58% to 109% free of all risk or work, limited enthusiasm to expand designated activities - suggest diversion was probably very high. We put our guess at 50% of the value of loans issued:  $\$4,623,300 \times .5 = \$2,311,650$ .

IV. Most Likely Case

1. Wage Value Added

- a. Employment: same as minimum plus jobs saved.  
 $1,830 + 1,355 = 3,185$  person years.
- b. Wage Value Added  
 $3,185 \times \$409 = \$1,302,665$

2. Interest, Profit, Rent

- a. Interest: minimum case = \$1,535,045
- b. Profit: employment-based estimate as in the minimum case.  
 $2,552 \times \$1,620 \times .435 = \$1,798,394$

3. Training Benefit: same procedure as minimum case .  
 $3,185 \text{ person years} \times .35 \times \$60 = \$66,885$
4. Distributional Weight: same procedure as maximum case.  
 $\$1,302,655 \times .25 \times .5 = \$162,832$
5. Opportunity Cost of Labour: the other side of the coin of the distributional procedure; that is, we assume that three-quarters of the wage bill represented the opportunity earnings of those who received it.  
 $\$1,302,665 \times .75 = \$976,999$
6. External Economies
  - a. Final Demand Linkage: Profits & Wages  $\times .2$   
 $(1,798,394 + 1,302,665) \times .2 = \$620,212$
  - b. Backward linkage: same procedure as maximum case but we assume the opportunity cost of labour and foreign exchange constitutes 40% of purchased inputs; we use a trading firm adjustment of .5 rather than .58 to correct for the latter's higher purchased inputs-value added ratio; and, in keeping with our direct value added calculations, we are assuming as sales increase 60% that of the maximum case.  
 $\$4,507,525 \times .6 \times .5 \times .6 = \$811,355$
7. Diversion Benefit: same as maximum case.

Table 4.4

Internal Rate of Return Calculation

	(1)	(2)	(3)	(4)	(5)
	<u>Benefit</u>	<u>Costs</u>	<u>Net Benefits</u>	<u>310% Discount Factor</u>	<u>Discount Net Benefit</u>
1973	91.5	168.9	-77.2	-1.000	-77.2
1974	518.9	374.6	144.3	.2439	35.2
1975	1,099.9	506.8	592.2	.0594	35.2
1976	1,060.8	579.9	480.9	.0145	7.0
1977	709.8	433.3	276.5	.0035	1.0
1978	671.6	504.3	167.3	.0009	.1
1979	305.3	533.0	-227.7	.0002	-
1980	1,007.4	950.3	57.1	-	-
1981	<u>2,175.1</u>	<u>1,700.6</u>	<u>474.5</u>		
	<u>7,632.0</u>	<u>5,751.5</u>	<u>1,880.5</u>		<u>-1.3</u>

- (1) Most likely benefits over project life distributed by column (3) from Table 4.2
- (2) Column (10) from Table 4.2
- (3) Column (1) - (2)
- (4)  $1/(1 + 3.10)^t$
- (5) Column (3) x (4)

## Chapter V. IDH Honduras

In 1977, operating on the basis of donations from Christian businessmen and the volunteer service of an American missionary, the Institute for International Development, Inc. (IID) began credit operations in Honduras.<sup>1</sup> Following the receipt of an AID matching grant on March 6, 1979 the Instituto para el Desarrollo Hondureño (IDH) was registered in Honduras as a private non-profit organization under the auspices of IID. In accordance with its revised program policies, IID created IDH with the intention of having the latter organization become local and self-sufficient, thereby allowing IID resources to move elsewhere. As an offshoot of IID, IDH received financial and staff support from its headquarters up until their formal separation in December 1981. Since this date, IDH has continued operations through funding from AID and the Inter-American Development Bank (IADB).

The objectives and methods of IDH were formed during its association with IID. Although both IID and IDH have a broad Protestant affiliation, neither limits its work to a specific creed. Both organizations do, however, utilize a social network to achieve their program objectives. These objectives have three central components: to reduce unemployment through the development of small enterprises; to provide an alternative credit source to those businesses unable to obtain it through existing formal lines; and to provide its clients with technical and managerial assistance.

<sup>1</sup> A report by Peter H. Fraser and Bruce A. Tippet, Impact Evaluation: IID/IDH Honduras (May 1982) provides the institutional and historical background to the IDH project. The information on IDH operational procedures was obtained through interview from David Befus and Peter Fraser; quantitative data were developed from the original Fraser-Tippet questionnaires of 69 clients, as well as from IDH records. We are much indebted to Peter Fraser, David Befus, and Oscar Chicas for all their help.

### Program Implementation

IDH had two operational components, a \$250,000 loan fund and a technical assistance program. After making initial contact with the program, applicants are given forms containing questions on social and occupational background and purpose of the loan. The applicant is asked to complete three displays (a breakeven chart, an income statement involving depreciation, and a cash-flow diagram including loan repayment) which refer to the loan project or established business. A minimum of assistance is given in completing these forms as IDH utilizes this exercise as a test of business knowledge and commitment to the program. The loan officer then analyzes the application for its feasibility, and should the project seem viable, visits the firm and constructs a separate report. An interesting finding from a comparison of the client's and the program's revenue estimates was that the former generally assumed that they could sell a quantity equal to their output capacity, while IDH generally held the region's demand as limiting sales to one-quarter that level.

At this point, the applicant's file is reviewed by the Board of Directors. Approved loans are then processed and disbursed. Roughly one month elapses between the initial application and the disbursement of the loan. Until 1981, the disbursement of the loan was a very simple procedure, requiring a witness but not a lawyer. A private document ("documento privado") describing IDH and loan purpose, and promissory notes returnable to the client upon repayment of the loan, are signed by both parties. Hence, legally-binding collateral was not a requirement of the program. However, three types of personal guarantees were indicated in the "documento privado": equipment and personal assets; cosigner; and fiduciary.<sup>1</sup> Legally-binding collateral documents were introduced in the later part of 1981. This change in policy reflected both the insistence on the part of AID that the loan programs which it assists formally collateralize their loans, and the end of outside financing which left IDH dependent on its interest earnings as its sole source of income.

Every 30 to 45 days thereafter, the enterprise is visited for the purposes of loan collection and general monitoring of the business' progress. These visits originally entailed some technical assistance; however as the program grew, thereby increasing the field staff's collection duties, the teaching element was reduced in scope. Delinquencies were met with threats from IDH, but, without legal authority to seize property prior to 1981, IDH could only back down or attempt to reschedule these loans. If the loan was refinanced, an enforceable collateral document from 1981 onwards was signed by the client.

---

<sup>1</sup> The distinction between cosigner and fiduciary is unclear.

The technical assistance arm was primarily in the form of four three-day seminars per year, and reached various parts of Honduras. Held as retreats, members of the program gathered to discuss business experiences, to learn general management practices and bookkeeping, to gain a sense of professionalism within a circle of associates, and to foster a spirit of motivation within the IDH family. Also participating clients often brought along outsiders whom they considered to meet program qualifications. It was here at these seminars that potential clients learned of IDH and were introduced to program members.

Promotion of the program was kept low-key. IDH never publicly announced the program, but rather recruited new clients in the above-mentioned manner or through client referral. These methods of making initial contact fulfilled a number of purposes. The use of word-of-mouth contact kept the population of applicants - and hence processing cost - at manageable levels. The pool was further limited by only accepting applications from certain geographical zones along specific monitoring routes. The church network also facilitated the search for reputable borrowers by providing a system of referral. This saved much time in the gathering of information on background and integrity. The direct costs associated with informing potential clients of the program's work and regulations were also reduced by having the existing clients act as program spokespeople. And finally the seminars served to inspire the dedication and commitment of new-comers through their formal introduction to the program.<sup>1</sup>

### Project Impact

From the beginning of its operations in 1977 to December 1982, IID/IDH disbursed a total of 161 loans equalling \$517,768. Average loan size was \$3,216. Loans ranged in value from \$250 to \$50,000. The average maturity of the loan was two years, with the average client remaining in the program for 1.5 years. A 10 to 16 percent annual interest rate was charged as compared to the 27 percent (19% interest plus 5 to 8% fees) charged by formal institutions. The average monthly loan payment, including both principal and interest, was about \$150. The number of loans made per year, their value, and a calculation of the size of the average loan are shown in Table 5.1. Of note in this table is the striking reduction in average loan size over the program. This decrease stems, in part, from the small experimental loans given to poor farmers in Zopilotepe during 1981 and 1982.

<sup>1</sup> It should be added that as a result of its recent \$400,000 grant from the IADB, IDH is moving into additional client zones.

Table 5.1

IDH Loans 1977-1982  
(current dollars)

<u>Year</u>	<u>No. of Loans Made</u>	<u>Value of Loans</u>	<u>Average Loan Size</u>
1977	2	\$6,500	\$3,250
1978	10	80,325	8,033
1979	17	159,500	9,382
1980	17	59,500	3,500
1981	20	46,168	2,408
<u>1982</u>	<u>95</u>	<u>163,775</u>	<u>1,724</u>
<u>TOTAL</u>	<u>161</u>	<u>515,768</u>	<u>3,216</u>

Table 5.2:

IDH Operational Costs  
(current dollars)

	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>
Salaries and Benefits	\$3,077	\$3,077	\$3,077	\$15,129	\$25,397	\$39,175
Supervision travel/ per diem	483	483	483	4,416	4,623	7,097
Office rent & expenses	2,061	2,061	2,061	4,543	6,059	6,430
Other expenses	<u>2,722</u>	<u>2,722</u>	<u>2,722</u>	<u>5,523</u>	<u>3,381</u>	<u>5,643</u>
<u>TOTAL</u>	<u>\$8,343</u>	<u>\$8,343</u>	<u>\$8,343</u>	<u>\$29,611</u>	<u>\$39,460</u>	<u>\$53,334</u>

The cost of the program exclusive of the loan fund during this period is estimated at \$152,444 and is broken down by year and usage in Table 5.21. The average loan cost \$947 or 29 percent of its value. Costs rose as the program went on, with the amount for salaries and benefits showing a dramatic increase. Until mid-1979 the manager was a missionary volunteer, so the only salary was that of a secretary.

By the end of 1982, 137 loans valued at \$333,543 were outstanding, with 58 of these loans or 42 percent being overdue. Roughly \$35,000 of the amount outstanding was considered unrecoverable, but had not yet been written off. Four factors account for this high delinquency rate. First, the repayment terms were not properly structured. Because of its three-year contract with AID, IIDI instituted a payback policy limiting terms to three years and preferring terms of two years or less, with grace periods of 3 to 6 months. For fixed asset loans, as a comparison with FDR/Peru makes clear, these are very short maturity. As many of the projects which IDH assisted did not generate cash flow until well after the initial payments were due (i.e., a farmer who had bought land and seed with the loan and intended to pay it off with the harvest, or a new factory which required a start-up period greater than the loan's grace period), many loans fell immediately into delinquency. IDH, on the other hand, did not fear these imminent delinquencies, but preferred to accept them as casualties of a political decision beyond their influence and to reschedule terms when the time came.

A second factor is a unique set of concerns and mandates which IDH was able to pursue as a result of the solvency of its loan fund. One of IDH's donors, the Overseas Private Investment Corporation (OPIC) provided half of its funds in the form of a grant. Given the security IDH enjoyed, it was possible to lend to high-risk firms. This security also allowed IDH to respond positively to the 1979 Carter Administration mandate to reach "the poorest of the poor." In addition, IIDI required IDH to document that each client was not eligible for commercial loans. Because of the OPIC cushion IDH was able to give client survival a higher priority than repayment performance. Often, the new firms or agricultural/livestock enterprises fell into difficulties.

<sup>1</sup> Costs for 1977 and 1978 were not available and were held as being equal to 1979 costs because in all three years the staff remained constant.

IDH, after having assessed the cause of delinquency, would reschedule the loan and provide supervision, if the business was thought to be uneconomical only in the short-term and if the client's commitment remained high. This usually allowed many firms to remain solvent.

The third factor relates to the use of the "documento privado." Although each loan was guaranteed in one of the three forms, without the legal authority to back up its threats, IDH was unable to foreclose on unjustifiable delinquencies.<sup>1</sup> In this light, the close convergence of the delinquency rates found on Table 5.3 can be understood: regardless of the kind of guarantee used, each type was equally as binding as the next, or rather, as unenforceable.<sup>2</sup> Of greater interest is delinquency on the basis of the client's sex. Of the 20 delinquencies in the Frazer/Tippett April 1982 survey of 69 clients, 19 were men. Only 1 of 13 women in this sample, or 8 percent, was late in payment, as compared with 19 of 56 men, or 34 percent. Ceteris paribus, it would appear that men are roughly 4.5 times as likely as women to be delinquent.<sup>3</sup>

Table 5.3

IDH Loan Guarantees and Delinquency

<u>Type of Guarantee</u>	<u>No. of Loans</u>	<u>Delinquent</u>	<u>% Delinquent</u>
Machinery, equipment, assets	36	10	27.8
Co-signer	19	5	26.3
<u>Fiduciary</u>	<u>14</u>	<u>5</u>	<u>35.7</u>
TOTAL	69	20	28.9

---

1 In a few cases, IDH was able to bluff the client and seize property.

2 The lower delinquency rate of April 1982 suggests that delinquency is on the rise.

3 In regard to our sample, the loans to women were smaller and had a larger working capital share than those going to men. The women's business were less often start-ups and were primarily baking, seamstress and retail activities.

Of these 69 enterprises assisted by the program, two thirds were in the agricultural/livestock or manufacturing sectors. Their combined share of the total loan value was 79 percent, with the remaining 21 percent being divided among the service/transportation, commercial and construction sectors (see Table 5.4). The average loan was for \$6,241.1

The average firm employed 5.5 people, inclusive of the owners. The ratio of family to non-family workers was one to three. Only 9, or 13 percent, of the 69 firms were solely owner operated, and 6 firms, or 8.7 percent, had 10 or more non-family workers. The average client was 39 years old. Of the 69 clients, 13 or 19 percent were women. From Annex 1 of the Fraser/Tippett evaluation, over half of the 28 clients surveyed were not members of the lowest social or economic strata. Roughly one-third of this sample of 28 were judged bankable, with the agricultural sector clients reaching 85 percent. There were 5.9 members in the average client family. The amount of education varied greatly; however, the majority of clients had limited schoolings. Among a Catholic majority, most clients were Protestant, with the Evangelical denomination being the predominant sect.

In comparison to the 1979 Stallman and Pease MSU survey of 3,703 Honduran rural industries, it is found that the IDH client firms are at the top end of the distribution. From this large survey, employment per enterprise (inclusive of owners) averaged 2.2 persons with 94 percent of the firms having less than 5 workers and 59 percent being operated solely by the owner. Family members accounted for 68 percent of the labor force. The total assets of the firm averaged \$1,093. Firm owners were women in 61 percent of the surveyed cases.

Characteristics of 24 IDH client firms interviewed by Fraser and Tippett are displayed in Table 5.5. It can be seen in this table that this survey's proportion of women clients and average number engaged per firm are lower than the broader averages above, that the average loan size is 2.7 times greater than the overall program figure, and that the manufacturing sector represents half of the businesses assisted.

Between the time of the initial contact with the program and April 1982, the average monthly personal income increased from \$346 to \$387.1

1 The sample of 69, and subsample of 24, are primarily from the years of 1978-81.

2 All income and asset figures in 1982 prices.

Table 5.4

Characteristics of 69 IHD Enterprises

<u>Sector</u>	<u>% Loans</u>	<u>% Loan Value</u>	<u>Average Loan Size</u>	<u>Ave. Employed (Inclusive of owners)</u>
Agricultural Livestock	36.2	37.5	\$6,450	6.1
Service Transportation	14.5	13.4	5,910	5.3
Commercial	13.0	2.7	1,334	1.6
Construction	5.8	3.6	4,000	5.0
Manufacturing	30.4	41.3	8,698	6.4
Located in Home	51%	Products sold locally		93%
Registered	60%	Supplies procured locally		70%
Use of Bookkeeping (at initial contact)	4%	Urban location:		50%

Table 5.5

Characteristics of 24 IDH Clients and Businesses

<u>Clients</u>		<u>Businesses</u>	
Women	8%	<u>Sectors:</u>	
With other activities	46%	Agricultural/livestock	21%
Previous formal loans	26%	Service/Transportation	17%
Average loan size	\$8,629	Commercial	4%
Fixed investment per loan	70%	Construction	8%
		<u>Manufacturing</u>	<u>50%</u>
		Average no. engaged per firm:	4.7
		Business start-up/diversification	71%

(see Table 5.6). This \$41 average increase represents 12 percent of their initial earnings. Of the 20 clients with detailed income information, 12 increased their income over the period, 4 remained unchanged, 2 showed a loss, and 2 more had ceased operations. Dividing these 20 clients into the groups of loans to established firms (n=6) and to business start-ups (n=14), it is found that, both in absolute terms and as a percentage of income at the date of initial contact (only one client of the 14 who started an enterprise was unemployed prior to the loan), the start-up group outperformed the established clients. Breaking down the start-up group between those entrepreneurs who had background in the field of the new venture (n=7) and those who did not (n=7), it is found that the former grouping increased their incomes by 63 percent whereas the latter declined by 20 percent.

Table 5.6

IDH Monthly Client Income

	<u>All Firms</u>	<u>Est'hed Firms</u>	<u>Start-ups (overall)</u>	<u>Start-ups w/ backgrnd</u>	<u>Start-ups w/out backgrnd</u>
Initial Contact	\$346	\$592	\$232	\$250	\$215
April 1982	387	598	298	407	172
Absolute Change	41	6	57	157	(-43)
% Change	12%	1%	25%	63%	(-20%)
No. of Clients	n=20	n=6	n=14	n=7	n=7
up	12	3	9	6	3
unchanged	4	3	1	1	0
down	2	0	2	0	2
not producing	2	0	2	0	2
(income=0)					

From detailed information on assets of a handful clients (n=8), all were found to have substantially increased their personal business holdings. Assets by 1.5 to 10 times their initial levels, with the average growth from \$4,150 to \$12,400, or 199 percent (or \$2.02 of holdings was created for each fixed investment loan dollar). Detailed information on business sales and profits was sparse; however, sales were roughly 6.5 times greater than the clients' April 1982 disposable incomes, and profits were about double this latter amount, indicating that \$387 was returned monthly to each business. Assuming that

the profits of new firms rose from zero to the sum of twice disposable income and \$150 for loan payment, and that the profits of established enterprises went up twice their groups' disposable income increment, monthly profits increased by an average of \$660. Similarly for sales, new firms increased from zero to 6.5 times disposable income, and established firms by 6.5 times their group's incremental disposable income, rendering an average increase of \$1,797.

Approximately 2.7 jobs were created per assisted enterprise. Of the 56 new jobs in 22 enterprises, 14 were for apprentices and trainees, and 14 were taken by family members. The average monthly salary paid to each of the 46 employees was \$81. When comparing the jobs generated from loans larger than \$5,000 (n=10) with the number generated by smaller loans (n=12), it was found that 3.4 new jobs and 2.2 new jobs were created, respectively. However, on a loan dollar per job basis, one position was generated from every \$4,680 of the larger loans, as opposed to a \$1,269 figure for the smaller loans.

Given the above-mentioned figures, an average client firm's monthly cash-flow in April 1982 can be estimated (see Table 5.7). Beginning with the \$387 disposable income, this is doubled to \$774 and then increased by \$150 for loan repayment to yield profits of \$924. A sales figure of \$2,516 is arrived at by multiplying disposable income by 6.5. Subtracting profits and \$365 for salaries (4.5 non-owners at \$81 each) from sales leaves a remainder of \$1227 for raw materials, rental and extraneous business outlays.

Table 5.7

IDH-Member Firm Monthly Cash-Flow of April 1982

Sales		2,516
Raw Materials	1,227	
Salaries	365	
Profit	924	
Loan Repayment	(150)	
Retained	(387)	
Disposable Income	(387)	

IDH provided its clients with technical and managerial assistance primarily via the seminars. Roughly two-thirds of the clients did attend one or more of the seminars, and many of those who had not, said they were planning to do so soon. In the opinion of the clients, they felt that the seminars were an excellent source of motivation and support. Many commented that by being in a group of small business people for the first

time, their feelings of isolation were erased and they finally had the opportunity to discuss business concerns among associates. Aspects of the seminar which were also mentioned as being strong were the discussions of legal matters, business management and control (including accounting practices), and employee relations. The percentage of clients who had a bookkeeping system (albeit often not up-to-date) was found to have risen sharply from the overall initial contact level of 4 percent to an astonishing 87 percent for the 24 clients interviewed in April 1982. The technological advice given by IDH to its agricultural/livestock clients was uniformly perceived by these clients as being inappropriate or of poor quality. The clients unanimously voiced the opinion that the credit component was the most important form of assistance rendered by the program.

We now turn to the benefit estimates.<sup>1</sup> There were 2.7 jobs created per assisted enterprise in the sample of 24 firms. However, because this sample is so strongly biased towards large firms with large loans (the average program loan being 2.7 times smaller than the sample's average), it was necessary to apply the jobs created by "small" versus "large" loans directly to the overall program. Calculating employment in this manner estimates that 2.5 jobs were created per firm. Multiplying 2.5 jobs per firm by the 161 firms in the program, by an average time in program (which assumes benefits to last 1.5 times average loan maturity) of 1.3 years, by the standard .5 "time adjustment," and by a "failure adjustment" equal to one minus one-half of the 10 percent failure rate, a final estimation of 249 person years was reached. With each employee receiving \$81 per month (generated so as to include all workers, save the owner), and with the standard downward productivity adjustment of .9 applied, the value of employee wages was \$217,825.

The most accurate incremental profit figure suggested by our data was based upon double the clients' "disposable income" profit subcomponent, plus \$150 for loan repayment. Again, because the monthly \$660 incremental profit was derived from a sample which over-represented large firms, this amount was reduced by the relative difference between the average program loan size and the sample's average. This new profit level was then applied to the 161 firms over 1.3 years, was modified by a .5 time adjustment, a .95 failure adjustment, and a .9 downward productivity adjustment, which rendered a figure of \$262,463. Total value added in the minimum case was the sum of the wage and profit components, and equalled \$480,288.

---

<sup>1</sup> In this and the following project (Dominican Republic) a slightly different procedure for handling opportunity costs is used and several benefit components are not estimated - training, distributional weighting, diversion.

The benefits in the maximum case include direct incremental value added occurring within the client firms plus external economies such as incremental value added in other firms and price reductions to consumers.

Starting with employment and wage value added, we used the same variables and amounts, save for a 1.5 time in program figure (which assumes benefits are earned to infinity) and the exclusion of the downward productivity adjustment, and obtained 287 person years and a value of \$278,964. The profit calculation differed from that of the minimum case in its use of a 1.5 time in program figure; and was equal to \$336,490. Total Value Added was \$615,454.

Moving on to the external economies, a final demand linkage, representing the additional purchases resulting from the local consumption of the project's total value added is estimated by multiplying the total value added by a .22 constant, and was \$135,400. The next benefit, the backward linkage created by the project, is an estimation of the new domestic production which occurred as a result of any increase in the supply of goods and services used by the assisted firms. This value was obtained by subtracting the value added from the additional sales, and by adjusting the remainder for import content and the proportion of loan value going to trading firms. The calculation of incremental sales proceeded in the same manner as the profit estimation, and resulted in a value of \$916,171. The total value added in the maximum case of \$615,454 was then subtracted from sales. The remainder, purchased inputs, was then multiplied by the standard .7 import compensation and by the constant of one minus the 3 percent of loan value to trading firms, and yielded a backward linkage of \$204,187. The last external economy, a benefit to the consumer, indicated by a drop in the real price of goods sold, did not apply in this case. Total external economies equalled \$339,587, and the sum of all benefits in the maximum case totalled \$955,041.

Table 5.8

IDH Honduras Benefit Synopsis

(US 1982 dollars)

	<u>Minimum Case</u>	<u>Maximum Case</u>	<u>Most Likely Case</u>
Wages	\$217,825	\$278,967	\$153,090
Profit	262,463	336,490	184,680
External Economies			
Final demand linkage	nil	135,400	66,878
Backward Linkage	nil	204,187	102,094
Consumer Benefit	<u>nil</u>	<u>nil</u>	<u>nil</u>
	nil	339,587	168,972
Total Benefit	480,288	955,041	506,742
Total Project Cost	\$309,600		
Direct Cost		211,300	
Capital Erosion		98,300	

I. Worst Case

1. Wage Value Added (change in employment x average wage, adjusted for productivity loss)

a. Employment

-based on average of 2.7 jobs created per assisted enterprise in sample of 24 firms, and that "small" loans (55% of sample) created 2.2 jobs per loan, versus 3.4 for "large loans."

-must be adjusted because sample of 24 strongly biased to larger firms with larger loans.

-overall average loan size of \$3,216 versus sample loan size of \$8,629.

-average program loan 2.7 times smaller than sample ( $8,629/3,216 = 2.7$ ):

ratio of "small" loans to "large" loans in overall program equals 3.3 to 1, or "small" loans are 77% of all loans:

-average employment = (2.2 persons x .77 "small" firms)

+ (3.5 persons x .23 "large" firms) = 1.7 + .8 = 2.5 persons per assisted enterprise.

-161 firms in program, with average time in program (assumed benefits last 1.5 times average loan maturity) of 1.3 years.

-time adjustment: standard compensation of .5

-failure adjustment: from sample of 24, 2 of 20 firms not operating:

failure rate of 10%; failure adjustment of .95.

New employment = 2.5 persons x 161 firms x .5 time adjustment x 1.3 years x .95 failure adjustment = 249 person years.

b. Wage Value Added

-employee wages, with downward productivity adjustment

-average wage of \$81/month:

249 person years x \$81/month x 12 months/year x .9 downward productivity adjustment = \$217,825.

2. Profit, including loan repayment, adjusted for productivity loss

-based on monthly firm profit increase of \$660 over program in sample of 24 firms

-must be adjusted because sample of 24 strongly  
biased to large firms with larger loans  
-average program loan 2.7 times smaller than  
sample:

reduce firm size by 2.7 times, i.e., reduce  
profit increase by 2.7 times

Profit = \$660 monthly profit increase/2.7 x 161 firms  
x 1.3 years x 12 months/yr x .5 time adjustment x  
.95 failure adjustment x .9 downward productivity  
adjustment = \$262,463

3. Total Value Added = (1) + (2) = \$480,288

#### II. Memorandum Items

1. Interest:

36% of total loan value returned by 1982:

36% of \$517,768 = \$186,396

interest = \$186,396 x .13 average interest rate =  
\$24,231

2. Unrecoverable Loans

About \$35,000 of loans considered uncollectable.

3. Technical Assistance:

-1982 staff of one expatriate consultant, one local  
manager, two local monitors

-two-thirds of the clients attended the seminars:

.67 x 69 clients = 46 clients

-seminars were "excellent" source of motivation  
and support; "strong" on legal matters,  
business management and control, and employee  
relations; "poor in technological advice

-clients with bookkeeping system rose over program  
from 4% overall to 87%

#### III. Maximum Case

1. Wage Value Added (change in employment x average wage)

a. Employment:

-same figures as worst case, except assumed that  
benefits are earned to infinity, creating average  
time in program of 1.5 years:

New employment = 2.5 persons x 161 firms x .5 time adjustment x 1.5 years x .95 failure adjustment = 287 person years.

b. Wage Value Added

-average wage of \$81/month:  
287 person years x \$81/month x 12 months/year =  
\$278,964

2. Profit including loan repayment  
-same figures as worst case, except average time in program of 1.5 years:

Profit = \$660 monthly profit increase/2.7 x 161 firms  
x 1.5 years x 12 months/year x .5 time adjustment  
x .95 failure adjustment = \$336,490

Total Value Added = (1) + (2) = \$615,454

3. External Economies

a. Final demand linkage = 22% x total value added.  
.22 x \$615,454 = \$135,400

b. Backward linkage: purchased inputs x inputs x import content adjustment x % of loans not going to trading firms.

Purchased inputs = new sales - Total Value Added.

new sales: average monthly sales increase of \$1797 in sample of 24

-must be adjusted because sample of 24 strongly biased to larger firms with larger loans

-average program loan 2.7 times smaller than sample:  
-reduce firm size by 2.7 times, i.e., reduce sales by 2.7 times:

Sales = \$1797 monthly sales increase/2.7 x 161 firms  
x 1.5 years x 12 months/yr x .5 time adjustment  
x .95 failure adjustment = \$916,171

Total Value Added (from above) = \$615,454

Purchased inputs = \$916,171 - \$615,454 = \$300,717.  
non-trading firm adjustment = 1 - 3% = .97

Backward linkage = \$300,717 purchased inputs x .70 import adjustment x .97

non-trading firm adjustment = \$204,187

c. Consumer Benefit

-real prices did not drop: consumer benefit = 0.

Total External Economies = (3) + (4) = \$339,587

Total Benefits in the Maximum case = (1) + (2) + (3) + (4) = \$955,041.

Most Likely Case

1. Wage Value Added (change in employment x average wage, adjusted for productivity loss)

a. Employment

-based on minimum estimation of 2.5 jobs created per enterprise  
-161 firms in program, with average time in program of 1.3 years.

-however, new enterprises (71% of firms assumed to take years to start-up: their average operating time in program 1.1 yers: average time in program =  $(1.3 \text{ years} \times .29) + (1.0 \times .71) = 1.1 \text{ years}.$

-time adjustment: standard .5 compensation.

-failure adjustment: many delinquencies as result of short-term operating difficulties: delinquency rate indicating operation difficulties.  $1 - (1/2 \text{ failure rate}) + 1/2 (\text{delinquency rate} - \text{failure rate}) :$

$1 - 1/2(10\%) - 1/2(42\% - 10\%) = .79 \text{ failure adjustment}$

new employment = 2.5 jobs per firm x 161 firms x .5 time adjustment x 1.1 years x .79 failure adjustment = 175 person years

b. Wage Value Added

employee wages, with downward productivity adjustment  
-average wage of \$81/month

175 person years x \$81/month x 12 months/y4 x .9 downward productivity adjustment = \$153,090

2. Profit, including loan repayment, adjusted for productivity loss

-based on \$660 monthly profit increase, reduced 2.7 times:

\$660/monthly profit increase/2.7 x 161 firms x 1.1 years  
x 12 months/yr x .5 time adjustment x .79 failure  
adjustment x .9 downward productivity adjustment =  
\$184,680.

Total Value added = (1) + (2) = \$337,770

### 3. External Economies

- a. Final demand linkage: 22% of total value added,  
adjusted for productivity loss

.22 x \$337,770 x .9 downward productivity adjustment =  
\$66,878

- b. Backward linkage: purchased inputs x import content  
adjustment x % of loan value not going to trading firms:

-sales based on \$1,797 monthly increase, reduced by 2.7  
times.

sales = \$1,797 monthly sales increase/2.7 x 161 firms x  
1.1 years x 12 months/year x .5 time adjustment x .79  
failure adjustment = \$558,703.

Total Value Added (from above) = \$337,770

Purchased Inputs = \$558,708 - \$337,770 = \$220,933

non-trading firm adjustment = 1 - value of loans to trading  
firms = 1 - .027 = .973

Backward Linkage = \$220,933 purchased inputs x .70 import  
adjustment x .973 non-trading firm adjustment = \$150,477

### C. Consumer Benefit

-real prices did not drop  
consumer benefit = 0

Total External Economics = (3) + (4) = \$217,355

Total Benefit in Most Likely Case = (1) + (2) + (3) + (4) =  
\$555,125

Table 5.9  
IDH Costs

	<u>Direct Costs in 1982 Dollars</u>	+	<u>Capital Erosion 1982 Dollars</u>	=	<u>Total Cost</u>
1977	\$ 13,954	+	\$ 418	=	\$ 14,372
1978	13,144	+	4,276	=	17,420
1979	11,681	+	25,381	=	37,062
1980	35,858	+	37,475	=	73,333
1981	43,363	+	16,709	=	60,072
1982	58,344	+	14,063 + \$35,000	=	107,407
<b>TOTAL</b>	<b>\$176,344</b>		<b>\$133,322</b>		<b>\$309,666</b>

Capital Erosion Calculation

	<u>Value of Loans Given in Year</u>	<u>Value of Loans Outstanding</u>	<u>Inflation Rate</u>	<u>Capital Ero- sion Factor</u>	<u>Price Index</u>	<u>Value of Capital Erosion</u>
1977	\$ 6,500	\$ 3,250	8.4%	.077	1.67	\$ 418
1978	80,325	46,663	6.2%	.058	1.58	4,276
1979	159,500	163,325	12.5%	.111	1.40	25,381
1980	59,500	229,413	15.6%	.135	1.21	37,475
1981	48,168	163,334	10.2%	.093	1.10	16,709
1982	163,775	159,806	9.6%	.088	1.00	14,063
<b>TOTAL</b>	<b>\$517,768</b>	<b>\$765,791</b>				<b>\$98,322</b>

Average maturity of IDH loans = 2 years

Table 5.10  
IDH Benefits

-75-

	<u>Loans Given in Year</u>	<u>Price Index</u>	<u>1982 Value of Loans Given in Year</u>	<u>Loans Outstanding</u>	<u>% of Total Loans Outstanding</u>	<u>Value of Benefits</u>
1977	\$ 6,500	1.67	\$ 10,855	\$ 5,428	0.6%	\$ 3,331
1978	80,325	1.58	126,914	73,728	8.0%	44,410
1979	159,500	1.40	223,300	228,655	24.7%	137,116
1980	59,500	1.21	71,995	277,590	30.0%	166,538
1981	48,168	1.10	52,985	179,667	19.4%	107,694
1982	163,775	1.00	163,775	159,806	17.3%	96,037
TOTAL	\$517,768		\$649,824	\$924,874	100.0%	\$555,126

Average loan maturity = 2 years

Total Benefits in Most Likely Case = \$555,126

Table 5.11

IDH Internal Rate of Return

	<u>Benefits</u>	<u>Costs</u>	<u>Net</u>	<u>375%</u>
1977	\$ 3,331	\$ 14,372	(\$11,041)	(\$2,324)
1978	44,410	17,420	26,990	1,196
1979	137,116	37,062	100,054	933
1980	166,538	73,333	93,205	183
1981	107,694	60,072	47,622	20
1982	96,037	107,407	(11,370)	1
TOTAL				<u>9</u>

Internal Rate of Return = +375%

## VI. DDF DOMINICAN REPUBLIC\*

Founded in 1965, the Dominican Development Foundation (DDF), a private voluntary organization, has worked extensively in the rural communities of the Dominican Republic. In 1980, DDF became interested in an urban microenterprise program, and subsequently launched PRODEME in May 1981 with AID funding. PRODEME consists of two subprojects, the solidarity group component and the microenterprise component. Lending operations for both subprojects began in July 1981 and additional funding has come from the Inter American Foundation, Appropriate Technology International and Dominican sources.

PRODEME is part of the PISCES (Program for Investment in Small Capital Enterprise Sector) Project Phase II, whose focus is an in-depth evaluation of the demonstration projects developed by PISCES in conjunction with local institutions. These projects are funded in part by local AID missions, with ACCION International/AITEC acting as the prime contractor and supplying an advisor on project design, implementation and training.

### The Microenterprise Component

The "microenterprise" component of PRODEME is targeted to small artisan manufacturers with 2 to 3 employees, and was adapted from previous ACCION programs in Brazil (UN ), Columbia and Mexico. The objectives of this component are the generation of new income and employment and the

\* Based primarily upon the evaluation report by Jeffrey Ashe, Assisting the Survival Economy in the Dominican Republic (1982).

participation of large numbers of businesses in the program at low cost. Only small manufacturing and service firms are eligible for assistance on the grounds that commercial firms were generally assumed to have little potential for creating new jobs. Potential clients in the microenterprise component learn of the program either through word of mouth from project participants or through announcements in newspapers.

The loan application stage contains several components and entails many visits to the firm. The construction of the initial application takes an average of 4 visits to the firm. Should questions arise on the application during its review by the DDF analyst, return visits are undertaken to resolve the matter. Additionally, a simple bookkeeping system is initiated and management advice is given to the owner. The maintenance of records is required throughout the program, and thus the DDF coordinator returns to the firm to insure compliance. All loans are fully collateralized in the form of property, household appliances or co-signer.

After the approval of a loan, the staff coordinator continues his visits to the firm on a weekly basis to provide further technical assistance in bookkeeping, marketing and managing of employees, as well as to monitor the progress of the loan which is generally disbursed 30 to 60 days after approval. Formal technical assistance courses are additionally offered. Legal steps to foreclose on the collateral are taken when the coordinator is unable to collect overdue payments. In only one case, however, have personal assets been seized.

Thus, the PRODEME microenterprise component differs from its predecessor, UNO/Recife, in three ways. First, AITEC eliminated trading firms from eligibility in the DDF. Second, the DDF disbursed credit directly from its own fund, thereby retaining the interest earned on the loans. And third, the DDF greatly increased its technical assistance to both its clients and the microfirm community.

From July 1981 to December 1982, a total of 101 loans, equalling \$158,032, were disbursed to 101 microfirms through the microenterprise component. Three hundred firms received some technical assistance either in the form of a loan, of several visits from coordinators and/or of attendance in the formal technical assistance courses. Costs up to December 1982, inclusive of administrative and technical assistance costs, were \$69,534 or 44 percent of the total loan value. The projected total costs of an average 14 month loan of \$1,564 is \$917 or 59 percent of its value. An interest rate of 12 percent was charged, bringing in \$188 per loan and implying a subsidy of \$729 per loan. This subsidy figure is greater if late payment costs are included.

In December 1982, 42 percent of the loans were delinquent. The evaluator saw this high delinquency rate as a result of: a perception among clients that 100 percent payback was not necessary; loan repayment schedules which were too short; and the clients' lack of motivation to pay back the loans as repeat loans were difficult to obtain. The total principal not returning to the credit fund is estimated by the authors to be \$22,946.

TABLE 6.1

Characteristics of the Owners  
(N = 48)

	<u>Program Participants</u>	<u>Control Group</u>
% Women	20	15
Age (years)	38	45
Education (years)	10	5.6
# of Dependents	5.0	4.8
Experience (years)	15	20.7
% With Other Source of Income	29	28

Throughout the operation of the program, a control group comprised of firms which had qualified for the program but then had decided not to join was monitored so as to assess the impact of the loans on the client firms. In comparing a sampling of 48 PRODEME microenterprise participants and the control group, see Table 1, it is seen that the control firms are similar in the likelihood of a female owner (80%), in the likelihood that the latter has a second source of income (28%) and in the number of dependents in the household (5). They diverge in that assisted entrepreneurs are younger (38 v 45) and better educated (10 years of schooling v 5 1/2). Between the initial contact and the date of the study (six months to a year after loan disbursement), the assisted firms markedly outperformed the unassisted control group (see Table 2). The differential growth in total investment of the participating firms relative to the control was 23 percent or \$512 per firm. Investment in machinery and equipment had a differential of 24 percent, or RD\$567 per firm. Monthly expenditure for raw materials had a differential of 4 percent, or \$512 per firm. Full-time equivalent employment had a net increase of 63 percent, or 1.4 employees per firm. Additionally, none of the assisted firms went bankrupt during the period as compared to a 13 percent failure rate in the control group.

The 48 assisted microenterprises were broken into 4 groups of 12 according to their change in value-added. The most successful program firms, those with increases above 96 percent, tended to be the smallest with the lowest absolute

profits but with the greatest investment in machinery and equipment. These firms had the smallest loans (loan size per grouping average ranged from RD\$2179 to \$2525), received slightly more visits from the coordinator before (18) and after (17) the loan. All of these firm owners attended the technical assistance courses. The effect of management advice is quite pronounced in this group as they rose in the eyes of the coordinators from having deficient to average management skills to the highest levels of any group. This group's members were on average the youngest (33 years old), the most predominately male (91 percent), had the fewest dependents (4), the most education (11 years), the fewest years of experience (12), the youngest firms (4.5 years old) which also represented the sole source of owner income in the greatest number of cases (89 percent).

On average, each firm in the program received 16 visits from the coordinators before and 16 visits after loan disbursement. Roughly 85 percent of all clients attended the formal courses. The survey found that proficiency in each of the management skills promoted by PRODEME (bookkeeping, marketing, managing employees, and organization of production) rose significantly from the initial contact to its highest level at the date of loan disbursement and fell somewhat thereafter. Interestingly, bookkeeping, a program requirement, was found to have been the most deficient skill at initial contact, the most proficient skill at loan disbursement, and the most deficient skill again at the date of the final evaluation.

During the PRODEME program, a new job was created for each \$1,121 extended as credit. The average full-time equivalent wage of \$94 per month is higher than the minimum wage of \$85 but is without the fringe benefits of the formal sector. Some 53 percent of the workers in the assisted firms are earning less than the minimum wage, the majority of whom are young workers who have little experience or are apprentices. The employees overall tend to be young (89 percent are under 35 years old) and are not relatives of the firm owners (in 80 percent of the cases). Although the program had operated only 17 months at the date of the most recent evaluation, the findings of this report are quite encouraging and are as follows: 8 to 10 of those employed before the loan was given were still working; 9 in 10 of those hired after loan disbursement were still working; and of those who had left, almost half worked 7 months or longer. Additionally, nearly three-quarters of the employees reported that they had learned new techniques and skills.

In the minimum case, we began with 1.4 new employees per firm and extrapolated this to 141 jobs for the entire microenterprise component. Working with a variety of

information (average monthly salary of \$94; average duration of client firms in program of 9.4 months; 8 percent of the new employment occurred between the initial contact and loan disbursement; 9 in 10 of new employees were still working at the date of the survey, and of those who left, one-half worked 7 months or longer) we derived a wage value added, adjusted for productivity loss, of \$34.61. By Applying a monthly gross profit increment of \$312 per firm, a .85 time adjustment (70% of gross profit increase occurred between initial contact and loan disbursement), and the .9 downward productivity adjustment to 101 firms for 9.4 months, we approximated profit, interest and rent at \$226,603. Total value added in the minimum case was \$261,244.

Wage value added in the maximum case followed the minimum estimation almost exactly. However, because the control group had a failure rate of 134 percent, as compared to a zero failure rate for the assisted firms, the program was credited with having saved the original employment of 13 percent (or 13 of 101) of the assisted firms. Thus, 175 jobs, rather than the 141 figure, were the result of the program. This higher employment translated into wage value added (without the downward productivity adjustment) of \$84,596. Similarly, in regard to profit, the control group showed a \$86 decline in monthly value added, indicating that the incremental profit of the assisted firms resulting from involvement in the program is higher than \$312. Additionally, the initial gross profit of the 13 saved firms must be added to the profit estimation. Profit totalled \$363,400. Total value added equalled \$47,996. The final demand linkage utilized the \$47,996 figure and amounted to \$98,559. The backward linkage subtracted incremental value added from incremental sales, and left a remainder of \$20,993. There was no consumer benefit. The total external economies were \$119,552 and total benefit in the maximum case was \$567,548.

### The Solidarity Component

The second part of PRODEME is the "solidarity group" component. It is modeled after two projects in El Salvador and India identified in PISCES Phase I. These projects utilized credit groups formed by individual business owners so as to collectively guarantee the loans made and to build social and business networks within the area. Client participation is fostered at each stage in the program, with client responsibility being required for efficient functioning. The objectives of the DDF solidarity groups are: "empowerment through group experiences that reinforce entrepreneurship and grassroots advocacy; increasing income; and assisting large numbers of businesses at low cost."

The principal beneficiaries of solidarity group loans are tricicleros ("men who pedal heavy cargo trikes through the

streets of Santo Domingo selling fruits, vegetables and prepared foods, or collecting bottles, cardboard and scrap metal"), representing 83 percent of the groups. The work of a triciclero is strenuous, dangerous and has a low social status. The average triciclero works 6 days per week. The triciclero rents his triciclo from an agency for the fee of \$.85 to \$1.00 per working day and pays an additional \$.14 per day garage fee. These vehicles tend to be in poor condition. Often the tricicleros are in debt to these agencies, and borrow from them at interest rates of 8 percent per day! DDF provides triciclero group members with one-year loans of \$203 to purchase a new triciclo and \$17 of working capital. These loans are repaid in 52 payments and are charged with an interest rate of 24 percent (\$49 for an \$203 loan). The triciclero's payment of \$.81 per working day represented an immediate savings of \$.04 to \$.19 per day, with an additional \$.14 per day saved as most tricicleros kept their triciclos at home. After the loan is repaid annual net earnings should increase by the \$318 per year in rental fees, with a new triciclo lasting at least 5 years.

The remaining 17 percent of the solidarity groups is comprised of women who are seamstresses and food vendors. DDF provides these members with loans of up to \$203 to meet their working capital needs.

TABLE 6.2

Characteristics of Solidarity Members

	<u>Tricicleros</u>	<u>Other</u>
% of Solidarity Members	83	17
% Women	0	100
Age (years)	30	38
Education (years)	4	4
Residence in Santo Domingo (years)	9.6	14
Residence in Barrio (years)	5.5	6.5
Working Hours per Week	48	47
Years at Current Occupation	5.3	8.7
Daily Family Income	RD \$11.17	RD \$12.18
% of Family Income Earned Through Occupation	95	65
Personal Assets	RD \$1638	RD \$3258

The members of solidary groups typically are established members in their communities and are known as hard-working and as having a solid business. From Table 6.2, it can be seen

that the average triciclero is 30 years old, is a male head of the household (there are no female tricicleros), has 4 years of education, immigrated from Santo Domingo 9.6 years ago, has lived in the barrio for 5.5 years, works 48 hours per week and has been a triciclero for 5.3 years. The average "other" loan recipient is 38 years old, is a female head of the household, has 4 years of education, immigrated to Santo Domingo 14 years ago, has lived in the barrio for 6.5 years, works 47 hours per week and has been at her current occupation for 8.7 years.

The average daily family income of a triciclero is \$7.55, of which 95 percent is earned through the owner's business. Family income of the other clients averages \$8.24 per day, of which 65 percent comes from the owners enterprise. The assets of the working capital clients average \$2,202 as compared to \$1,107 for the tricicleros. The "other" group members typically live in better furnished homes in better parts of the city than their triciclero counterparts.

The program becomes known through word of mouth and is clarified through meetings run by beneficiaries. Solidarity groups of 5 to 8 business associates are formed or added to through consensual agreement among the group members who share the responsibility for loan repayment. Daily or weekly loan payments are made by the members to the group president, who then makes weekly payments at barrio-level meetings with DDF staff. Should payment not materialize for eight weeks, the delinquency is discussed among the coordinator, president and his group. As a last resort, property purchased through the loan is repossessed.

The program is currently staffed by five full-time coordinators (two of whom have only been recently added) and a supervisor. All are young economists or economics students. The coordinators orient and train new groups, prepare the loan applications, collect payments and troubleshoot groups with problems. Roughly 40 percent of the time of both the PRODEME credit analyst and director is devoted to the solidarity group component. Technical assistance is provided informally through the exchange of ideas among group members and formally in meetings of the client-initiated Dominican Association of Tricicleros. Solidarity group members, unlike those in the microenterprise component, can assume increasingly important roles within the program by participating or assuming a position of leadership for their individual group or for the Association. The solidarity group component has been evaluated twice since its start. In the first evaluation, conducted in September 1981, 85 triciclero groups had been organized with 600 members, of which 62 groups had received loans. All loan payments were on schedule. At the time of the second evaluation in April 1982, lending had begun for the "other"

working capital groups. However, 20 percent of the loans at this point were found to be in arrears. Currently, (December 1982), the solidarity component has a 33% delinquency rate, resulting in half of the coordinators' time being spent on loan collection and repayment problems. Additionally, the coordinators' overall ratings of the initial solidarity groups had fallen from a before-loan level of 4.92 (5 being highest) to a current rating of 2.22.

The evaluator suggested five causes for this breakdown within the solidarity groups. First, the monitoring which transpired between groups ended as more groups became involved in the the program. Second, it was discovered that the requirements to entry had been reduced or eliminated, resulting in the hasty formation of groups comprised of members who often neither knew or lived near each other. Third, the year-long payback period proved to be too lengthy as most members had never had any credit experience lasting more than one week. Fourth, the coordinators found it virtually impossible to repossess the triciclos because the Foundation was not willing to back them. And fifth, the motivation to repay the loan was reduced because DDF did not grant second loans. This last point is more poignant as 80 percent of the solidarity members desired a second loan. To their credit, the Association of Tricicleros has established its own loan fund of \$1,350 which is used to meet the emergency needs of its members.

As a result of these findings, the program methodology was modified so as to increase the staff coordinators' participation and regulation in the forming and informing of potential groups. The DDF coordinator currently gives a 4-hour two-part course to newly formed groups on the program as well as on the responsibilities and the requirements entailed in membership. Unqualified pre-members and those who lose interest drop out, necessitating the recruitment of new members and the repetition of the course. Each group which is successfully formed elects a president and is officially registered in the program. This modification has resulted in higher current ratings of the more recently formed groups (between 3.26 and 3.72). The program has also been modified through the elimination of several steps in the processing of the loans. However, loan processing remains slow, with loan approval requiring an average of 60 to 90 days and loan disbursement taking another 30 to 60 days.

From May 1981 to December 1982, loans equalling \$190,287 were disbursed to 158 solidarity groups. The average amount of the loan to each group was \$1180. A total of 978 group members received credit assistance from DDF, with an average loan per member of \$191. A total of 144 loans equalling \$175,637 were disbursed between May 1981 and October 1982. Total costs

during this period were \$37,555 representing 20 percent of loan value. Total costs extrapolated up through December 1982 equal \$37,596.

Administrative costs average \$345 or 28 percent of an average \$1,220 loan. With interest charges of 24 percent, an average loan pays \$293, implying a subsidy of \$53 per loan. This subsidy is greater if late payment costs are additionally included. There is currently \$41,912 of delinquent repayment of principal.

Breaking down the recorded cost, personnel expenses (including 40 percent of the time of the credit analyst and PRODEME director) equalled 8 percent of loan value, direct administrative costs (including transportation, purchase of motorcycles and equipment, materials, etc.) represented 6.4 percent, and indirect administrative costs (the salaries of part-time Foundation personnel) equalled 5.7 percent. Over the first year and 4 months of operation, the total amount loaned fell from \$85,362 in the first six months to one-half of this amount in both the second 6 months and the final 4 months. Total costs fell from \$15,690 in the first period to \$11,509 and \$8,351 in the second and third, respectively. In the breakdown of these costs, only personnel expenditures rose, going from \$3,911 to \$5,464 and \$4,714, or from .6% to .7% of the cumulative loan total. Initial direct administrative costs were 1.0% of the cumulative loan total but dropped to .2% in the final 4 months. Initial indirect administrative costs were .8%, reducing to .3% by the end of the period. The rising personnel costs were the result of increased coordinator time spent in forming groups and in collection of late payments.

When polled on their opinions of the program, 60 percent of the solidarity group members preferred the group loans to individual loans. More than 80 percent of the members would have liked a second loan from DDF, with 74 percent preferring to do so with the same group. Of those wanting a second loan, 40 percent would use it to start a new business, with this figure reaching 67 percent for tricicleros alone. The tricicleros would like this new business to take them off the streets and put them into a fixed location. Roughly half of the members had used up their working capital amounts and many of these clients had turned again to the expensive informal sources.

More than half of the solidarity clients reported that participation in their group and the Association has helped their business "a lot," primarily owing to their procurement of a loan through the group and the personal lending which transpires among group members. About one-quarter of both groups thought their participation did not help at all, with the remainder voicing positive responses of "some" or "a

little." More than half are actively involved in the program by being president of a group, forming a new group, or attending barrio-level meetings. Two-thirds of the group presidents would be willing to serve again. Though virtually all members entered with a history of little or no participation in any other organization, member participation in community projects rose significantly during the operation of the program.

From the findings of the coordinators, the groups have the following positive characteristics: frequent meetings among one-third of the groups to share ideas and problems; attendance of one-fifth of the groups in barrio-level meetings; good solidarity in one-half of the groups; strong leadership in three-quarters; high levels of mutual support for one third. The groups were found to have the following negative aspects: one or more late payments in 85 percent of the groups; major divisions in one third; the selling or pawning of triciclos by at least one member in one quarter of the groups; the repossession of a triciclo or removal of a member in one third.

A May 1982 study reported that the average income of the older groups had increased from \$5.35 per day to \$8.67, or by 62 percent. However, in a survey four months later, the average member income had decreased from \$6.30 before the loan to \$5.54, or by 11 percent. The majority of group members reported in September 1982 that economic conditions had turned unfavorable, that costs had increased and that they were selling more but earning less. Therefore, the evaluator suggested that the most recent income decreases were either a result of the declining Dominican economy or a difference between the older and newer groups in terms of motivation or entrepreneurial skill. Another interpretation is that increased competition was responsible for this decrease in earnings. According to ACCION International/AITEC, the triciclo rental firms reported that business continues as usual: more people wish to rent triciclos than are available. The DDF has, in effect, added 812 new tricicleros to the Santo Domingo area.

In regard to benefits, the solidarity component generated no new employment or wage value added in either the minimum or the maximum case. This is because the tricicleros and the other working capital members are self-contained entrepreneurs and not employers.

Profits contained two components. The first was the incremental income of the members and was based upon one of two surveys. In the September 1982 survey, which the minimum case calculation used, member income dropped by \$.76 per day. Applying this decrease to 978 solidarity members for 9.4 months, rendered a negative \$181,658 figure. In the May 1982 survey, member income increased by \$3.32 per day. The maximum case calculation used this figure for the first two months of

the average members' participation in the program, before switching to the September 1982 finding, and yielding an estimation of \$105,439. Added to both the minimum and maximum cases was the savings which the purchased triciclos represented to the program members. In the minimum case, these savings were \$157,293 and in the maximum case, they were \$168,761. Total value added was the summation of the two profit components and equalled a negative \$21,929 in the minimum case and a positive \$274,200 in the maximum case.

The external economies generated in the maximum case are as follows. The final demand linkage equalled .22 times \$274,200 or \$60,324. Because all solidarity groups were considered traders and distributors, there were no backward linkages. A \$97,120 consumer benefit was created as the program effectively multiplied the number of tricicleros in the Santo Domingo area, and was equal to the member income drop from May to December 1987. External economies totalled \$157,444 and the total benefit in the maximum case was \$431,644.

Table 6.3

DDF Benefit Synopsis  
(1981 US dollars)

A. Microenterprise Sub-component

	<u>Minimum Case</u>	<u>Maximum Case</u>	<u>Most likely Case</u>
Wages	34,641	84,596	76,136
Profit, etc.	226,603	363,400	327,060
Final demand linkage	nil	98,559	79,833
Backward Linkage	nil	20,993	10,497
Consumer Benefit	nil	nil	nil
<b>Total Benefit</b>	<b>261,244</b>	<b>567,548</b>	<b>493,525</b>
Total Cost			
Direct Cost	92,480	100,635	
Capital Erosion	8,155		

B. Solidarity Sub-Component

	<u>Minimum Case</u>	<u>Maximum Case</u>	<u>Most Likely Case</u>
Wages	nil	nil	nil
Profit, etc.	21,929	274,200	236,459
Final demand linkage	nil	60,324	46,819
Backward Linkage	nil	nil	nil
Consumer Benefit	nil	97,120	97,120
<b>Total Benefit</b>	<b>-21,929</b>	<b>431,644</b>	<b>380,398</b>
Total Cost			
Direct Cost	58,523	68,011	
Capital Erosion	9,488		

Dominican Development Foundation Benefits: Fourth Stab

I. Worst Case

1. Wage Value Added (change in employment x average wage + project, adjusted for productivity loss)

- a. Employment

Solidarity group component: no new employment

Microenterprise component: 1.4 new employees per firm = 141 new employees for 101 firms (p. 57)

- b. Wage Value Added:

-employee wages:

Solidarity group = 0

Microenterprise: 141 new employees

average full-time equivalent salary of \$94 per month (p. 67)

average duration of client firms in program: Table 1: assuming benefits last up to 1.5 times loan maturity of 1.2 year:

(49/101 firms) (12 to 17 month) + (14/101) (7 to 11 months) + (38/101) (0 to 6 months) = 7.03 + 1.25 + 1.13 = 9.4 months

8% of new employment occurring between initial contact and loan disbursement: time adjustment = .5 + 1/2 (.08) = .54

9 in 10 of new employees still working (p. 69)

- 1) 141 employees x \$94 salary x 9.4 months x .54 time adjustment x .95 adjustment for new employees who left = \$59,157

- 2) Average microenterprise with 2.6 employees x 101 firms = 263 employees in firms before loans  
8 in 10 of before loan employees still working (p. 69)  
2 in 10 lost during program: .2 x 263 workers = 53 employees lost  
53 workers lost x \$94 salary x 9.4 months = (\$46,813)

- 3) Of those who left, 1/2 worked 7 months or longer (p. 69):  
53 employees x 1/2 x \$94 salary x 7 months = \$17,431

- 4) Therefore, 1/2 of those who left worked under 7 months:  
53 employees x 1/2 x \$94 salary x 3.5 months = \$8,715

-Total employee wages from microenterprise component = (1 - 2 + 3 + 4) x .9 downward productivity adjustment = \$34,641

2. Profit, Interest, Rent (Sales - Purchased Inputs - Wages), adjusted for productivity loss

- a. Solidarity component profit based on September 1982 income survey (pp. 31-32). Microenterprise component profit base "gross profit" on Table 20, p. 60.

Solidarity component: average member income decreased from \$6.30 per day to \$5.54 = (-\$.76 per day) (p. 32)

978 solidarity members

average period of membership in program: Table 1: assuming benefits last up to 1.5 times loan maturity of 1 year

(418/978 members)(12 to 17 months) + (236/978)(7 to 11 months) + (324/978)(0 to 6 months) = 6.2 + 2.2 + 1.0 = 9.4 months average.

1) (-\$.76 per day) x 978 members x 9.4 months x 26 days/months = (-\$181,658)

2) Each triciclero buys triciclo with loan having payback terms of \$.81 per day for one year (p. 12)

Each triciclo lasts five years (p. 34); therefore the actual cost to the owner of a triciclo is 1/5 of \$.81 per day. Hence there is a savings of 4/5 of \$.81 per day:

Total tricicleros = 83% of 978 members  
= 812 tricicleros 1/4 of triciclero groups with at least one pawner =  
1/4(812/5 members per group) = 34 pawners or sellers  
812 - 34 = 778 tricicleros did not pawn or sell

-778 tricicleros x 4/5 (\$.81 per day) x 312 days/year = \$157,293

3) Total solidarity profit = 1 + 2 x .9  
downward productivity adjustment =  
(-\$21,929)

b. Microenterprise: monthly gross profit increase per  
assisted firm \$312 per month (Table 20)

70% of gross profit increase occurring between  
initial contact and loan disbursement

\$312 profit x 101 firms x 9.4 months x .85 time  
adjustment = x .9 downward productivity adjustment  
= \$226,603

3. Total Value added in the worst case

Solidarity component = 0 + (-21,929) = (-21,929) =  
Microenterprise component = \$34,641 + \$226,603 =  
\$261,244  
= RD\$ 487,142

## II. Memorandum Items

1. Interest

a. Solidarity: total of 158 loans

average loan value = \$1,180

i = 24%

33% of loans delinquent December 1982 (p. 47)

estimated 68% of loans due back by December

1982 (from Table 1 and average loan duration of  
1 year)

-158 loans x \$1180 size x .24 i x .67 repayment  
rate x .68

due back = \$20,386 (\$29,977 due back from total  
loans)

b. Microenterprise

total of 101 loans

average loan value = \$1,564

i = 12%

44% of loans delinquent December 1982 (p. 76)

estimated 66% of loans due back by December

(from Table 1 and average loan duration of 14  
months)

-101 loans x \$1,564 size x .12 i x .56 repayment  
rate x .66 due back = \$7,066 (\$10,996 due back from  
total loans)

## 2. Unrecoverable Loans

Solidarity: 33% of loans delinquent x 1/2 not returning x 68% of total loan value of \$186,514 =  
 $.33 \times 1/2 \times .68(\$186,514) = \$20,927$

Microenterprise: 44% of loans delinquent x 1/2 not returning x 66% of total loan value of \$158,932 =  
 $.44 \times 1/2 \times .66(\$158,032) = \$22,946$

## 3. Technical Assistance

Solidarity: technical assistance difficult to assess; provided informally among group members and formally in meetings of the Association; coordinators worked to increase group cohesion and performance  
-coordinators overall ratings of solidarity groups fell from initial contact (4.52, with '5' highest) to December 1982 (2.99) Table 5

Microenterprise: technical assistance provided by staff coordinators on one-to-one basis before and during loan period: level of management rose from coordinators' ratings of 1.6 at first contact to 2.9 at date of loan to 2.6 in December 1982.

and: 3/4 of new employees reported learning new techniques and skills (p.69)

3/4 of 141 new employees = 106 employees with new skills

## III. Maximum Case

### 1. Wage Value Added (change in employment x average wage)

#### a. Employment

Solidarity: no new employment

Microenterprise: 141 new employees  
plus: 13% of control firms failed (p. 54)  
DDF saved 13% of assisted firms:  
 $13\% \times 101 \text{ firms} = 13 \text{ firms}$   
 $13 \text{ firms} \times 2.6 \text{ employees per firm} = 34$   
employees saved

Total microenterprise employment = 141 + 34 saved employees = 175 employees

#### b. Wage Value added

-employee wages:

Solidarity group = 0

Microenterprise:

1) 101 established firms x 1.4 new employees x \$94 per month x 9.4 months x .54 time adjustment x .95 adjustment for those who left = \$63,889

2) 2.6 original employees per firm x \$94 salary x 9.4 months x 13 saved firms = \$29,854

minus:  $2/10 \times 2.6$  employees per firm x (101 + 13 saved firms) = 59 employees lost

3) 59 employees x RD\$ 139 per month x 9.4 months = (-RD\$77,089)

plus: of those who left, 1/2 worked 7 months or longer

4) 59 employees x 1/2 x RD\$139 per month x 12 months = RD\$49,206

plus: therefore, 1/2 of those who left worked under 7 months

5) 59 employees x 1/2 x RD\$139 per month x 3.5 months = RD\$14,352

Total employee wages from microenterprise = 1 + 2 - 3 + 4 + 5 = \$84,596

2. Profit, Interest, Rent (Sales - Purchased Inputs - Wages)

a. Solidarity component profit based on May 1982 and September 1982 income surveys (pp. 31-2)

Microenterprise component profit based on "gross profit" from our Table 2

Solidarity component

The 42 original tricicleros had income increases of \$3.32 per day from July 1981 to May 1982 (p. 32): member income had decreased by \$.76 per day by September 1982

extrapolated for 978 members for 2.4 months (9.4 month average duration of members in program, minus 7 months of May to December 1982)

- 1) 978 members x \$3.32 per day x 2.4 months x 26 days/month = \$202,559  
minus: 1/2 income decrease of \$.76 per day for four months (May to September '82)
- 2) 978 members x (-RD\$1.13 per day) x 4 months x 26 days x .5 time adjustment = (-RD\$57,467)  
minus: income decrease of RD\$1.13 per day for three months (Sept. to Dec. 1982)
- 3) 978 members x (-\$.76 per day) x 3 months x 26 days/month = (-\$58,272)  
plus: each triciclo lasts for 7 years savings is 6/7 of \$.81 per day
- 4) 778 tricicleros x 6/7 (\$.81 per day) x 312 days/year = \$168,761

Total Solidarity Profit: 1 - 2 - 3 + 4 = \$274,200

Microenterprise Component:

control group showed \$86 decrease in monthly value added, with gross profit approximately two-thirds of value added (our Table 2) control group monthly gross profit decrease of ( $\$86 \times 2/3$ ) = \$57

assisted firm monthly gross profit increased by \$312, plus \$57 = \$369

- 5) \$369 per month x (101 + ) x 9.4 months x .85 time adjustment = \$297,779

plus: profit of 13 saved firms: initial gross profit per firm = \$537 per month (Table 20)

- 6) 13 firms x \$537 per month x 9.4 months = \$65,621

Total microenterprise profit = 5 + 6 = \$363,400

3. Total Value Added in the Maximum Case

Solidarity component = 0 + \$274,200 = \$274,200

Microenterprise component = \$84,569 + \$36,400 = \$447,996

4. External Economies

a. Final demand linkage:  $.22 \times$  Total Value Added

Solidarity component =  $.22 \times \$274,200 = \$60,324$

Microenterprise component =  $.22 \times \$447,996 = \$98,559$

b. Backward Linkage: purchased inputs x adjustment for import content x fraction of loan value which did not go to trading firms all solidarity groups are taken to be trading firms: none of the microenterprises are trading firms

backward linkage from microenterprises:  
purchased inputs = total new sales - Value Added from microfirms = new sales = \$496  
increased monthly sales per firm (our Table 2) x (101 firms) x 9.4 months x .76 time adjustment (from Table 25) = \$358,018

New value added = \$427 increased monthly value added per firm (our Table 2) x 101 firms x 9.4 months x .81 time adjustment (from Table 25) = \$328,028

Purchased inputs = \$358,018 - \$328,028 = \$29,990  
Backward linkage = \$29,990 purchased inputs x .70 import adjustment x 1 non-trading firm adjustment = \$20,993

d. Consumer benefit: derived from solidarity component: from May 1982 study to September 1982 survey, member income had dropped \$.76 per day.

Consumer Benefit = (\$.76 per day x 978 members x 3 months (Sept to Dec 1982 x 26 days/month) + (\$.76 per day x 978 members x 4 months (May to Sept 1982) x .5 time adjustment x 26 days/month) = \$58,272 + \$38,848 = \$97,120

Total External Economies:

Solidarity Component:  $\$60,324 + \$97,120 = \$157,444$   
Microenterprise Component:  $98,559 + \$20,993 = \$119,552$

5. Total Benefit in the Maximum Case

Solidarity Component:  $\$274,200 + \$157,444 + = \$431,644$   
Microenterprise Component:  $\$447,996 + \$119,552 + = \$567,548$

Most Likely Case

1. Wage Value Added (change in employment x average wage, adjusted for productivity loss)

a. Employment

-same as maximum case:

Solidarity component = 0

Microenterprise component = 175 employees

b. Wage Value Added

-same as maximum case, with .9 downward productivity adjustment:

Solidarity component = 0

Microenterprise Component = \$84,596 x .9 downward productivity adjustment = \$76,136

2. Profit, Interest, Rent, adjusted for productivity loss

-same as maximum case, except triciclos held as lasting for five rather than seven years, with .9 downward productivity adjustment:

Solidarity Component = 1 - 2 - 3 (for maximum case) + 2 (from minimum case) = \$202,559 - \$38,848 - \$58,272 + 157,293 = \$262,732: \$262,732 x .9 downward productivity adjustment = \$236,459

Microenterprise Component = 5 + 6 (from maximum case) = \$363,400: x .9 downward productivity adjustment = \$327,060

Total Value Added:

Solidarity Component = 0 + \$236,459 = \$236,459

Microenterprise Component = \$76,136 + \$327,060 = \$403,196

3 External Economies

a. Final demand linkage: 22% of total value added, adjusted for productivity loss

Solidarity Component = .22 x \$236,459 x .9 downward productivity loss = \$46,819

Microenterprise Component = .22 x \$403,196 x .9 downward productivity loss = \$79,833

b. Backward linkage: purchased inputs x import content  
adjusted x % of loan value not going to trading firms:  
-One-half minimum case:  
Solidarity Component = 0  
Microenterprise Component = \$10,497

c. Consumer Benefit  
-same as maximum case  
Solidarity Component = \$97,120  
Microenterprise Component = 0

Total External Economies:  
Solidarity Component = \$46,819 + 0 + \$97,120 = \$143,939  
Microenterprise Component \$79,833 + \$10,497 + 0 =  
\$90,329

Total Benefit:

Solidarity Component = \$236,459 + \$143,939 = \$380,398  
Microenterprise Component = \$403,196 + \$90,3296 =  
\$493,525

Table 6.4  
DDF Benefits

	<u>Loans Given in Year</u>	<u>Price Index</u>	<u>1982 Value of Loans Given in Year</u>	<u>Loans Outstanding</u>	<u>% of Total Loans Outstanding</u>	<u>Value of Benefits</u>
<b>Solidarity Component:</b>						
1981 <sup>1</sup>	\$ 85,362	1.07	\$ 91,337	\$ 34,252	24.5%	\$ 34,316
1982	<u>104,925</u>	1.00	<u>104,925</u>	<u>105,814</u>	<u>75.5%</u>	<u>105,750</u>
TOTAL	\$190,287		\$196,262	\$140,066	100.0%	\$140,066
<b>Microenterprise Component:</b>						
1981 <sup>2</sup>	\$ 74,766	1.07	\$ 80,000	\$ 20,000	16.6%	\$ 20,057
1982	<u>83,266</u>	1.00	<u>83,266</u>	<u>100,823</u>	<u>83.4%</u>	<u>100,766</u>
TOTAL	\$158,032		\$163,266	\$120,823	100.0%	\$120,823

<sup>1</sup>Begun in May of year; average maturity of 1 year; total benefits in most likely case = \$380,398

<sup>2</sup>Begun in July of year; average maturity of 1.2 years; total benefits in most likely case =  
= \$504,022

Table 6.5  
DDF Costs

	<u>Direct Costs in 1982 Dollars<sup>1</sup></u>	+	<u>Capital Erosion 1982 Dollars</u>	=	<u>Total Cost</u>
Solidarity Component:					
1981 <sup>2</sup>	\$ 15,690	+	\$ 2,398	=	\$ 18,088
1982	<u>21,906</u>	+	<u>7,090 + 20,927</u>	=	<u>49,923</u>
TOTAL	\$ 37,596	+	\$30,415	=	\$ 68,011
Microenterprise Component:					
1981 <sup>3</sup>	\$ 23,178	+	\$ 1,400	=	\$ 24,578
1982	<u>46,356</u>	+	<u>6,755 + 22,946</u>	=	<u>76,057</u>
TOTAL	\$ 69,534	+	\$31,101	=	\$100,635

Capital Erosion Calculation

	<u>Value of Loans Given in Year</u>	<u>Value of Loans Outstanding</u>	<u>Inflation Rate</u>	<u>Capital Ero- sion Factor</u>	<u>Price Index</u>	<u>Value of Capital Erosion</u>
Solidarity Component:						
1981 <sup>2</sup>	\$ 85,362	\$ 32,011	7.5%	.070	1.07	\$ 2,398
1982	<u>104,925</u>	<u>105,814</u>	7.2%	.067	1.00	<u>7,090</u>
TOTAL	\$190,287	\$137,825				<u>\$ 9,488</u>
Microenterprise Component:						
1981 <sup>3</sup>	\$ 74,766	\$ 18,692	7.5%	.070	1.07	\$ 1,400
1982	<u>83,266</u>	<u>100,823</u>	7.2%	.067	1.00	<u>6,755</u>
TOTAL	\$158,032	\$119,515				<u>\$ 8,155</u>

<sup>1</sup>Direct costs distributed linearly for microenterprise component

<sup>2</sup>Begun in May of year, average maturity of 1 year

<sup>3</sup>Begun in July of year, average maturity of 1.2 years

Table 6.6  
DDF Internal Rate of Return

	<u>Benefits</u>	<u>Costs</u>	<u>Net</u>	<u>300%</u>	<u>400%</u>	<u>450%</u>	<u>445%</u>
Solidarity Component:							
1981	\$ 34,316	\$ 18,088	\$ 16,228	--	--	--	--
1982	105,750	49,923	55,827	--	--	--	--

Internal Rate of Return = never has negative year  
= i of positive infinity

Microenterprise Component:

1981	\$ 20,057	\$ 24,578	(\$4,521)	(\$1,130)	(\$904)	(\$822)	(\$830)
1982	100,766	76,057	24,709	1,544	988	817	831

Internal Rate of Return = +445%

## Chapter VII. FDR Peru

The Rural Development Fund (FDR) Program of the Industrial Bank of Peru (BIP), the sole non-PVC project of the five being reviewed, was initiated in November 1975 in the bank's sierra departments of Cuzco, Junin, Puno and Ayacucho.\* Program funding totaled \$10 million, of which \$4 million came from BIP and \$6 million was granted from AID. Initial lending operations were small. In August 1977, the program received an additional \$2.3 million from AID and \$1.2 million from the Government of Peru (GOP), expanded operations to Cajamarca, Huancavelica, Apurimac and Huanuco, and increased lending volumes at all branches. In May 1979, Phase II of the program was undertaken with funding of \$8 million from AID and \$2.7 million from GOP. The FDR program, at this point, extended operations for a final time to a total of 19 departments. By mid-1981, however, the credit fund dropped to almost nothing, necessitating an extensive cutback in lending. In response to this, BIP transferred \$4.8 million of its own resources to the program's fund, thereby allowing FDR to continue its credit operations. Total funding up through 1981 totaled \$29,000,000 with all of these funds used as the FDR's credit resources.

The objectives of the FDR Phase I and Phase II were to develop and strengthen rural enterprises, thereby increasing the self-sustaining levels of economic activity, to create new employment, and to generate income and to improve its distribution. Specifically, the FDR was to institutionalize credit and technical assistance programs so as to develop,

---

\* Based primarily upon the evaluation report by Susan Goldmark, Jean-Jacques Deschamps, Joseph Recinos, Beatrix Glover, An Impact Evaluation of the Industrial Bank of Peru's Rural Development Fund (February 1982).

finance and manage new or existing small-scale enterprises in industry, services and commerce. The following loan eligibility criteria were established prior to program implementation: no access to credit on reasonable terms; an artisan, service, small-scale industrial or agribusiness firm; a loan of less than \$60,000; the loan amount would be no greater than 90 percent of the total investment; and the loan would be fully collateralized through the machinery to be purchased with the loan or the owner's or co-signer's personal assets.

### Program Implementation

The FDR operated as a one-man unit within each of BIP's branches, having its own coordinator, portfolio, customers and promotional activities. The enormous growth of the FDR during its first five years characterized by its increasing importance within the total lending operations of BIP, combined with the preferential status and strong operational support which FDR personnel received from Lima, in the form of all expense paid two-day seminars in Lima each month and higher than average salaries, created tensions in the branch offices which often resulted in FDR loan processing delays. These difficulties were resolved in 1980 through the complete institutionalization of FDR within BIP and the removal of FDR staff at branch level.

The FDR program was promoted through announcements, a promotional film, word of mouth, door to door contact and the solicitation of clients in areas affected by natural disasters. These activities, originally directed by the central office in Lima, are increasingly being initiated by the local branches of the program.

The client selection process was relatively short and consisted of a completed application form as well as a feasibility visit (lasting on average 4 hours) by a staff member to the prospective borrower. In the program's early stages, the application forms were often submitted without the necessary profit/loss statement, balance sheet and employment information. In response to this, a balance sheet from a certified accountant became a FDR requirement. This has forced borrowers to adopt elementary accounting practices but the additional paper work has also slowed down the lending process. The average time between loan application and loan approval is 78 days and the average time between loan approval and disbursement is 32 days. As BIP is strongly decentralized, the majority (80 percent) of lending decisions occurred at the branch level, with only the largest loans requiring authorization from the central administration. Frequently loans were disbursed directly to the supplier so as to prevent the misuse of loan funds by the client. Repeat loans (58% of all loans) were granted by increasing the existing loan rather than by processing a new one.

The loans were not monitored during the program unless payment was delinquent. For each month that payment was overdue, the client was sent a notice to this effect. After a loan was three months overdue, the bank's delinquent loan committee recommended that one of the following actions be taken: a one month extension, managerial assistance, or default coupled with legal proceedings.

### Program Impact

Between 1975 and 1981, FDR disbursed loans totaling \$42,331,200. Between 1978-81, 6,253 loans equalling \$37,227,000, or 88 percent of total loan value, were made. Extrapolated to the entire program, roughly 7,110 loans were disbursed. Average loan size between 1978-81 was \$5,953. Of these loans 60 percent were less than \$2,584, with only 10 percent more than \$12,400. Over this period, however, the number of small loans dropped from 75 percent of total loans in 1978 to 43 percent in 1981. Approximately 60 percent of the loans during this period were used to purchase fixed assets, with the remaining 40 percent going for working capital.

The interest charged on loans during 1975-81 was at an average negative real rate of 28 percent. As a result of this negative rate, the credit fund rapidly decapitalized. The actual rate charged on loans progressed upwards throughout the program and was 34 percent for loans to artisans, 40 percent for loans under \$30,000, and 49 percent for loans above \$30,000 in 1981. Loan repayment terms ranged from under two years to over five years in duration, with generous three-year schedules granted to many solely working capital loans. The average maturity was 3.0 years. The delinquency rate is estimated to be between 7 and 8 percent of the loans. This high repayment rate would seem to be related to (i) the prospect of a repeat loan, (ii) the light repayment burden owing to inflation, and (iii) the bank's repossession of machinery and personal assets on a number of loans overdue by more than six months.

From the evaluator's field survey on 85 sub-borrowers in 4 branches (Huancayo, Huanuco, Cuzco and Cajamarca), 92 percent of their firms were sole proprietorships which had been operating an average of 8 years. Of these firms 71 percent had urban locations. The average term of the loans to these clients was 4.25 years, suggesting that the firms in this sample are larger than the overall average. Forty percent of the 85 clients reported having received a loan from other sources prior to FDR. Of the 85 clients 22 percent had received formal credit previously, usually through BIP. Almost all of the entrepreneurs were firmly established as members of the business community prior to their loans. Most had worked as employees in other firms (29%), in their family firm (15%) or had owned another business. Roughly one-quarter of the businesses were owned by women, who often had inherited their

husband's business. Of the surveyed clients 70 percent reported that they had no other source of income.

The limited technical assistance provided by the program aided prospective clients in completing the various components of the loan application. Of the surveyed clients 21 percent reported having received assistance on the feasibility study. Sixty percent received help on the loan application. Twenty-two percent received accounting assistance, 9 percent received marketing assistance and 4 percent received advice on product process.

Of the firms surveyed 60 percent were in the industrial sector, 23 percent were in the service sector, 8 percent were artisans, 4 percent were in agriculture and 2 percent were in commerce. Seventeen percent of the firms produced intermediate goods and 11 percent manufactured capital goods. In the survey (conducted at the end of 1981) the average declared sales of these firms were \$33,605, showing an increase of 160 percent between the time of the client's first FDR loan and the date of the survey. Annual value added per firm was \$16,000 at the date of the survey and each dollar of the FDR loan was found to have produced an average of \$0.29 value added per year, with the average firm in the program for 2.6 years. These large increases despite a recession in 1976-78 reflect the huge expansion which occurred in the Cuzco alpaca firms; however, 93 percent of all surveyed owners reported that output had increased.

Beyond its economic benefits, FDR has had a significant institutional impact. It demonstrated to a previously skeptical Industrial Bank of Peru that small business lending is in fact less risky than fully-collateralized lending to larger borrowers (lower default rate, less delayed payment). However, the administrative cost per loan dollar year is significantly higher for the small business loan. Whether there would be a low default and substantial demand at much higher interest rates--that covered the rate of inflation plus administrative costs and a return on capital-- is still to be tested. Most categories of BIP lending are at negative real interest rates. But the FDR experience has been sufficiently positive so that BIP has made small business lending a top priority in its next five-year plan. Assisted in part by a line of credit from the World Bank, fully half of its new loans are going to the small enterprise sector.

Table 7.1

FDR Loan Portfolio and Lending Costs  
(thousands of 1981 U.S. dollars)

	(1)	(2)	(3)	(4)	(5)
	<u>US Price Inflatior (1981=100)</u>	<u>Loans Paid Out</u>	<u>Loans Out- Standing</u>	<u>L.O. 1981 Prices</u>	<u>% of All L.O.</u>
1975	169	67.0	33.5	56.6	0.1
1976	159	1,876.2	1,004.6	1,597.1	1.9
1977	150	3,116.6	3,500.5	5,250.8	6.1
1978	140	4,351.1	7,200.9	10,081.1	11.7
1979	125	6,023.7	11,417.2	14,271.5	16.7
1980	110	18,685.6	21,275.9	23,403.5	27.3
1981	100	8,211.6	30,990.6	30,990.6	36.2
		<u>42,331.2</u>	<u>75,423.1</u>	<u>85,651.2</u>	<u>100.0</u>

	(6)	(7)	(8)	(9)	(10)
	<u>AID Expenditure</u>				
	<u>Current Prices</u>	<u>1981 Prices</u>	<u>FDR Salaries</u>	<u>Other Salaries</u>	<u>Bad Debt</u>
1975	100	169	4.4	0.2	0.6
1976	100	159	26.4	4.2	12.0
1977	100	150	33.0	13.4	37.7
1978	100	140	40.8	25.8	72.4
1979	100	125	71.0	36.8	103.6
1980	100	110	102.0	60.2	169.2
1981	100	100	102.0	79.8	224.5
	<u>700</u>	<u>953</u>	<u>379.6</u>	<u>220.4</u>	<u>620.0</u>

	(11)	(12)	(13)	(14)	(15)
	<u>Peru Inflation Rate</u>	<u>Capital erosion Index</u>	<u>Value of Capital Erosion</u>	<u>Direct Costs</u>	<u>Total Cost</u>
1975	23.6%	.191	10.6	174.2	184.8
1976	33.5%	.291	464.8	201.6	665.9
1977	38.1%	.276	1,449.2	234.1	1,683.5
1978	57.8%	.366	3,689.7	279.0	3,969.0
1979	66.7%	.400	5,708.6	336.3	6,044.9
1980	59.2%	.372	8,706.1	441.5	9,147.6
1981	75.4%	.430	13,326.0	506.2	13,832.2
			<u>33,355.0</u>	<u>2,173.0</u>	<u>35,528.0</u>

- Notes: (1) IMF, International Financial Statistics.  
(2) Goldmark, p. 31.  
(3) Average maturity of 3 years applied to (2) based on the year mid-point.  
(4) (3) x (1).  
(5) Calculated from (4).  
(6) From text.  
(7) Inflation adjustment, (1) x (6).  
(8) From text, expressed in 1981 prices.  
(9) \$31 per loan in 1981 prices times 7,110 loans from Goldmark, the total of \$220,400 distributed by (5).  
(10) One-half of long term arrears rate of 1981 portfolio, \$31 million times 2% with the total of \$620 thousand distributed by (5).  
(11) IMF, International Financial Statistics  
(12)  $1 - 1/1 + \text{rate of inflation}$   
(13) (4) x (12)  
(14) (7) + (8) + (9) + (10)  
(15) (13) + (14)

Table 7.1 presents data on the loan portfolio - loans paid out and total value of the portfolio by year in current and constant dollars - and the cost of lending. The cost of lending consists of four elements of direct cost and one element of invisible cost. The four direct costs are as follows. First, there are AID grant expenditures on vehicles, computers, training seminars at home and abroad for FDR staff, radio and TV promotion. These have averaged \$100,000 per year. Second, there is FDR staff compensation which we estimate as follows, all at 1981 prices: the program supervisor in Lima at \$12,000 per year, one coordinator per branch at \$3,600, three additional Lima staff in 1980 and 1981 at \$7,200 each. Third, there is the time spent by branch bank staff beyond that of the FDR coordinator, estimated at \$31 per loan. Fourth, there is unrecoverable debt, estimated at 2% of the value of the 1981 loan portfolio. The last invisible cost element dwarfs the direct costs, by a factor of seven; it is the capital erosion that occurs in a highly inflationary environment. As against an interest income of about \$4.8 million over seven years FDR suffered \$33.4 million of capital erosion.

The benefit estimates are based on performance figures of the 85 enterprises which the evaluation team surveyed. Our figures for direct value added are the same in all three cases. With respect to the opportunity cost of labour, in the minimum case we assumed that foregone income to paid workers and apprentices was the average wage rate and double that for new entrepreneurs. In the maximum benefit estimate we assumed only the entrepreneurs had an opportunity cost, while in the most likely case we assumed that entrepreneur, apprentices and half the paid workers would have been employed elsewhere.

With respect to external economies the principal difference between the maximum and most likely cases is again the size of the opportunity cost of the resources used in those firms indirectly stimulated by the project.

The most arbitrary element of the estimates is the diversion benefit set at 5% of loans outstanding in the most likely case and 10% in the maximum case. With loans as cheap as these, the incentive to employ the proceeds in a variety of non-designated uses is great. These very low figures were chosen for two reasons. Neither the FDR staff nor the evaluation team found evidence of entrepreneurs having shunted the finance elsewhere. Equally the jump in output in the designated activities has been so high as to be inconsistent with any significant leakage.

Finally, in Table 7.3 we calculate the ultimate benefit-cost measure which brings in the element of time. Surprisingly, although benefits exceeded costs by only 3%, the internal rate of return is a whopping 136%. This is because benefits commenced at virtually the same time as costs, reflecting the advantage of zero start-up time when such a scheme is attached to an on-going lending agency. If there are unreported costs in 1974, 1975 or 1976 they would substantially lower the IRR. On the other hand, we have not taken into account the estimate by Goldmark, et al (p. B-4) that incremental sales were underreported by clients by 40%.

Table 7.2

FDR/Peru Benefit Synopsis

(thousands US dollars)

	<u>Minimum Case</u>	<u>Maximum Case</u>	<u>Most Likely Case</u>
Wages	5,120	5,120	5,120
Profit, Interest Rent	19,222	19,222	19,222
Training Benefit	142	142	142
Distributional Weight	nil	2,631	1,351
<u>less</u> Opportunity Cost of labour	-8,692	-3,287	-1,351
Direct Benefits	(15,792)	(23,828)	(19,729)
External Economies			
Final demand linkage		5,373	3,224
Backward Linkage		17,879	9,417
Consumer Benefit		nil	nil
External Economies		<u>(23,252)</u>	<u>(12,641)</u>
Diversion Benefit		8,565	4,283
Total Benefit	15,792	55,645	36,653
Total Cost:	\$35,527		
Direct Cost		2,173	
Capital Erosion		33,355	

I. Minimum Case\*

1. Wage value added = change in paid employment x average wage.

A. Paid Employment

-210 jobs were created in 85 surveyed firms of which 137.5 were salaried employees (p. 62) or 1.62 per firm. Ms Goldmark in discussion estimates these were 3,000 firms.

-average firm has been in the program for 2.6 years. (see Annex L)

B. Average Wage

-The average wage bill of the 85 firms was \$3,092 for 3.74 paid workers (pp. 50, 62).

C. Wage value added

-3,000 firms x 1.62 new paid workers x \$827 average wage x 2.6 years average firm in receipt of a loan x .5 time adjustment x .98 failure adjustment = \$5,120,486.

2. Profit, Interest, Rent

-"Gross income" or value added was generated at 29¢ per loan dollar per year (pp. 50,52). From our Table 7.1 we have calculated the later at \$85.65 million.

-\$85,651,200 x .29 value added coefficient x .98 failure adjustment minus wage value added \$5,120,486 = \$19,221,585.

3. Training Benefit = change in apprentices x .5 average wage.

-3,000 firms x .09 new apprentices per firm x 2.6 years in the program x .5 (\$827) x .5 time adjustment x .98 failure adjustment = \$142,250.

4. Opportunity cost of Labour

-New apprentices at \$827 per year = 3,000 firms x .09 new apprentice per firm x 2.6 years x \$827 x .5 time adjustment x .98 failure adjustment = \$284,477.

-New paid workers at their actual wages (l.c) = \$5,120,486.

-New entrepreneurs at twice the average wage rate = 3,000 firms x .26 new entrepreneurs per firm x 2.6 years 2(\$827) x .98 failure adjustment = \$3,287,226.

\*All citations of pages, tables and annexes refer to the Goldmark et al report.

5. Total Benefits = wages + profit, interest, rent + training benefit - opportunity cost of labour.
- $$-\$5,120,486 + \$19,221,585 + \$142,255 - (\$284,477 + \$5,120,486 + \$3,287,226) = \$15,792,137.$$

## II. Memorandum Items

### 1. Interest

-Total loan interest received by the FDR for the period 1975-1981 was approximately \$4.8 million in 1981 dollars.

### 2. Unrecoverable loans

-FDR does not write-off bad loans.

-Loans delinquent 3 months or more represented about 4% of loans outstanding in 1981 or \$1,240,000.

-Assume that one-half of the delinquent loans will be retrieved through court action, ultimate bad debts being \$620,000.

### 3. Technical Assistance

a. Technical Assistance based on Annex I total, clients approximately 3000 clients

21% received assistance on feasibility study = 630 clients

64% received assistance on loan application = 1920 clients

22% received assistance on accounting = 660 clients

9% received assistance on marketing = 270 clients

4% received assistance on product process = 120 clients

75% improved accounting system quality = 2250 clients

83% improved marketing ability = 2490

## III. Maximum Case

1. Wage Value Added: same as minimum case = \$5,120,486.
2. Profit, Interest, Rent: same as minimum case = \$19,221,585.
3. Training benefit: same as minimum case = \$142,255.
4. Distribution weight: a 1.5 weighting (50% increment) of income received by the bottom 30% in the national

income distribution: applied to paid labour and apprentices:  $.5(5,120,486 + 142,255) = \$2,631,370$

5. Opportunity Cost of Labour

-New entrepreneurs only = minimum case = \$3,287,226.

6. External Economies

A. Final demand linkage =  $.22 \times$  direct value added  
-  $.22(\$5,200,486 + \$19,221,585) = \$5,372,856$ .

B. Backward linkage = New Sales - Value Added x  
import content adjustment x for trading firms.

$-\$51,594,067 - \$24,422,071 = \$27,171,996$

[value added/sales relationship p. 50] x .70

import coefficient x .94 trading firms adjustment  
= \$17,879,173.

C. Consumer benefit = 0.

7. Diversion Benefit

-assume 10% of loans were diverted to other uses with  
benefits equal to 10% of loans outstanding.

$-\$85,651,200 \times .10 = \$8,565,120$ .

8. Total benefits = wages + profit, interest, rent +  
training benefits + distributional  
benefit + external economies +  
diversion benefit - opportunity cost  
of labour.

$- \$5,120,486 + \$19,221,585 + \$142,255 +$   
 $\$2,631,370 + (\$5,372,856 +$   
 $\$17,879,173) + \$8,565,120 -$   
 $\$3,287,226 = \$55,645,619$

IV. Most Likely Case

1. Wage Value Added: same as minimum case = \$5,120,486.

2. Profit, Interest, Rent: same as minimum case =  
\$19,221,585.

3. Training Benefit: same as minimum case = \$142,255.

4. Distribution weight: a 1.5 weighting (50% increment)  
of income received by the bottom 30% in the national  
income distribution.

-applied to the apprentices and half the paid labour:  
 $.5(\$142,555 + .5[\$5,120,486]) = \$1,351,248.$

5. Opportunity cost of labour

-New entrepreneurs, apprentices, and half the paid labour, calculated as in the minimum case:  $\$3,287,226 + \$284,477 + \$2,560,243 = \$6,105,946.$

6. External Economies

A. Final demand linkage

-Maximum case less 40% for opportunity cost of labour and foreign exchange:  $\$5,372,856 \times .6 = \$3,223,714$

B. Backward linkage = New sales = value added x adjustment for trading firms x adjustment for opportunity cost of labour and foreign exchange.

-Another sample of firms in Huancayo (p. 47) showed purchased inputs as a lower proportion of sales (32.4%) than the sample of 85 firms (52.7%). In this estimate we re-estimate sales based on a purchased inputs coefficient of 42%.

$-\$41,118,611 - \$24,422,071 = \$16,696,540 \times .94 \times .6 = \$9,416,849.$

C. Consumer Benefit = 0.

7. Diversion benefit

-One half the maximum case or 5% of loans outstanding:  $\$4,282,560$

8. Total Benefits = wages + profit, interest, rent + training benefit + distributional benefit + external economies + diversion benefit - opportunity cost of labor.

$-\$5,120,486 + \$19,221,585 + \$142,255 + \$1,351,248 + (\$3,223,714 + \$9,416,849) + \$4,282,560 - \$6,105,946 = \$36,652,751.$

Table 7.3

Internal Rate of Return Calculation

	(1)	(2)	(3)	(4)	(5)
	<u>Benefits</u>	<u>Costs</u>	<u>Net Benefit</u>	<u>136% Discount Factor</u>	<u>Discounted Net Benefit</u>
1975	36.7	184.8	-148.1	1.0000	-148.1
1976	696.4	665.9	30.5	.4239	12.9
1977	2,235.8	1,683.9	551.9	.1795	99.1
1978	4,288.4	3,969.0	319.4	.0761	24.3
1979	6,121.1	6,044.9	76.2	.0322	2.4
1980	10,006.3	9,147.6	858.7	.0137	11.8
1981	<u>13,268.4</u>	<u>13,832.2</u>	<u>-563.8</u>	<u>.0058</u>	<u>-3.3</u>
	<u>36,653.1</u>	<u>35,528.0</u>	<u>1,126.1</u>		<u>0.9</u>

- (1) Most likely benefits over project life distributed by column (5) from Table 7.1.
- (2) Column (15) from Table 7.1.
- (3) Column (1) - (2)
- (4)  $1/(1 + 1.36)^t$
- (5) (3) x (4)

## Chapter VIII. Comparative Analysis: Some Lessons

Before turning to an analysis of the comparative performance of our five projects, it will be helpful to set out a general model of the determinants of project success. It is in this context that we can best appraise the significance of the lessons that these case studies yield up.

Projects succeed when they cause an increase in output that is greater than the cost of the inputs they provide. "Output" is net of any production lost as scarce resources employed elsewhere are drawn into the project's domain; the "cost of inputs" includes both the price of the input and the cost of delivery. Anything that raises the output response among assisted producers or lowers the cost of delivery will enhance the benefit-cost ratio.

Looking first at the benefit side, we can partition the controlling factors into two groups, namely, (i) the appropriateness of the inputs that are chosen relative to actual production needs and (ii) the responsiveness of the producers who receive these inputs. With respect to inputs, these are basically of four types which affect the firm's output in one of two ways:

1. Working capital (meeting expenses that exceed sales) to permit the survival of the firm; we observe maintained sales.
2. Working capital to permit fuller utilization of existing fixed capacity; we observe increased sales.
3. Long-term finance for horizontal expansion (replication of fixed assets and working capital); we observe increased sales.
4. Long-term finance to enlarge fixed capital per worker (leading to cost reduction or better product quality); we observe increased unit profit margins.
5. Managerial knowledge to speedup the rate of throughput from the existing plant and labor force; we observe increased unit profit margins.

6. Technical knowledge to permit the introduction of a new product; we observe increased sales.
7. Combinations of 2-to-6.

If the inputs delivered do not fit existing production techniques or do not tap a market situation of excess demand, there will be little output response. Many aid projects fail on these counts, perhaps most frequently because the managerial or technical knowledge being offered does not in fact have the potential to reduce costs.

The second factor determining the size of project benefits is client responsiveness. The principal factors here are the ability of the entrepreneurs, the external economic environment and the specific incidence of Government policies. Entrepreneurial absorptive capacity needs no elaboration. The external economic environment includes, in addition to the efficiency of the country's product and factor markets, the degree to which private disposable income is growing (expanding market demand), infrastructure development--particularly the road network--and the relative severity of foreign exchange-related constraints. The last element, specific policy incidence, is the only one that is controllable. It includes tariffs on equipment and inputs used by assisted producers relative to those of their larger-scale competitors, access to foreign exchange, the nature and enforcement of labour legislation, the enforcement of sales and profit tax and municipal licensing regulations,<sup>1</sup>

It is worth pausing a moment on the policy issue. Projects are no substitute for good policies. Not only are some policy improvements (e.g. creating equal access to foreign exchange) far cheaper than projects, the latter have the potential of increasing output from a comparatively small number of enterprises versus policy's impact on the entire population of producers. However, it is through the operation of a project that detailed information can best be gained as to how specific policies impact the functioning of micro-enterprise, as to the best channels for improving policy and as to appropriate arrangements to insure continuous feedback. Not least of all, projects are one of the best means for mobilizing support and getting the government bureaucracy to act. Refining policy and executing well-designed projects are thus complementary, not competitive, activities.

<sup>1</sup> For a comprehensive discussion of policy issues see Kilby (1982), chapter IV.

The third major determinant of the benefit-cost ratio operates on the denominator. Delivery cost is the outcome of the set of activities that are designed into the delivery system and the cost-effectiveness in carrying them out. Consider the delivery of credit. In one case designed activities may be no more than a single interview, a short on-site visit, registering of collateral, minimal postal follow-up on repayments and foreclosure proceedings when required. In another delivery system activities may include an area census, a pre-screening interview, three or four visits assisting in developing accounts and projected cash flow for the loan application and a dozen post-loan visits (advisory and policing of repayment). With respect to implementing these two delivery systems the central office may be large or small, the field staff can be college students or middle-level professionals, and the workplace of all--depending upon the esprit of the agency--can be leisurely or brisk.<sup>1</sup>

### Project Design

Having erected our analytic framework, we turn to the comparative analysis to see what lessons, old and new, can be drawn from the performance of the five projects. The first issue is that of project design and its structural relationship to various categories of benefit and cost.

If the benefit calculus employed in this study has even a rough correspondence to the underlying pattern of income and expenditure flows, it teaches a number of simple but powerful lessons for constructing successful projects. Our data here, shown in Table 8.1, are the most likely case estimates taken from the benefit synopses expressed as a percent of project cost.

<sup>1</sup> In theory there are interactions between all three sets of determinants--useful inputs, producer responsiveness, delivery cost. The more complementary technical assistance supplied through the delivery system the greater the range of inputs that will prove useful, the higher the output elasticity of the producers and the fewer the defaults. Thus the more costly delivery system could result in more benefits, lower default costs and a higher benefit-cost ratio. Such hoped-for outcomes provide the rationale for bureaucratic expansionism in the form of multi-input, integrated projects. However, all the evidence is against extensive interaction.

Table 8.1

Project Design and the Structure of Benefits  
 -benefit components as a percent of total costs-

	<u>PfP</u>	<u>UNO</u>	<u>IDH</u>	<u>DDF</u>	<u>FDR</u>
Direct Value Added <sup>1</sup>	18.0	63.6	109.0	379.3	51.5
Final Demand Linkage	4.9	10.8	21.6	75.1	11.0
Backward Linkage	10.4	14.1	33.0	6.2	26.6
Consumer Benefit	53.6	-	-	57.6	-
Training Benefit	0.3	1.2	-	-	0.4
Distributional Benefit	10.3	2.8	-	-	3.8
Diversion Benefit	<u>4.3</u>	<u>40.2</u>	<u>-</u>	<u>-</u>	<u>12.1</u>
Total Benefit	101.1	132.7	163.7	518.3	103.4
Total Costs <sup>2</sup>	100.0	100.0	100.0	100.0	100.0

<sup>1</sup> Wages, profit, interest, rent less labour opportunity cost.  
<sup>2</sup> Capital erosion owing to inflation accounts for the following proportion of total cost: PfP = 4%, UNO = 34%, IDH = 32%, DDF = 10% and FDR = 94%.

The first observation is that the gross benefit level of all these projects is comparatively high. More to the point, for choosing among program alternatives these levels of gross benefits compare very favorably with results achieved in lending schemes that serve larger scale non-traditional (modern) enterprise [Levitsky, 1982] and in purely technical assistance projects that serve traditional rural industry [Kilby, 1979].

A second observation is related to the source of project benefits. From our sample of five it would seem that extremely successful projects such as DDF and IDH are successful by virtue of their direct impact upon client firms. One can infer from this that very successful projects are unlikely to go unnoticed. The same is not true for a much larger number of moderately successful projects of which PFP, FDR and UNO are prototypes. These ventures are transformed from being very substantial losers to being winners by virtue of their unseen external economies. Herein lies some important and not so obvious lessons for project design.

The first lesson concerns the type of economic activity selected as an aid target. By a considerable margin the largest single category of SSE is retail trading. Because of their number, these firms have frequently been the object of assistance programs. While they have other advantages and disadvantages from a development point of view, they suffer the great handicap of not generating backward linkages, one of the major contributors to a favorable level of benefits. In the case of IDH and FDR backward linkages alone were equivalent to more than a quarter of the cost of the project; on the other hand, extremely small backward linkages, owing to a heavy weighting of trading activity, hurt PFP and DDF. Retail trade is but the extreme case of variance in backward linkage. Empirically-based estimates of these inter-industry purchases should be one of the criteria in choosing target activities.

A second lesson is revealed by an examination of the consumer benefit. When projects are designed so as to assist producers in localized economies, as in Diapaga and Fada or the concentrated lending to Tricoleros in the Dominican Republic, aggregate supply is shifted out relative to market demand. Reported by clients as the undesirable emergence of "cut-throat competition" or "market saturation," it signals a price reduction to the consumer. Because of the consumer surplus and the fact that none of the potential benefit can be lost to inefficiency, the benefit to consumers exceeds the benefit producers would have retained without the price reduction. And, as can be seen in the two so designed projects here, the benefit is very large.

The third element in our external economy category, the final demand linkage, contrasts with the other two in that it is directly proportional to value added in the client firms,

helping very successful projects yet further--as in DDF--and doing little to aid those that most need it. The only case in which this would not be true would be one where the receivers of "profit" had very different personal expenditure patterns than wage receivers. Here the final demand linkage would vary with the relative size of the two shares.

There are a number of lessons to be gleaned from an examination of the expenditure side of the equation. It is in the nature of things that flexible, exploratory, stage I projects like PFP have high cost and a small proportion of expenditure going to the benefit-creating loan fund. In contrast, "stage III projects" that have benefitted from much prior testing (such as DDF) have a modest expenditure share for local staff carrying out well-defined, limited tasks and a large expenditure share devoted to high-payoff lending. Inspection of accounting procedures also reveals the negative leverage of loan defaults: on the one hand, there are fewer loans generating benefits in the numerator and, on the other hand, unrecoverable loans are added on to the costs in the denominator. Finally, although unfavorable with respect to equity considerations, repeat loans and larger, long-term loans reduce delivery cost per dollar lent per year and thereby raise the benefit-cost ratio by lowering the denominator.

### External Environment

A second area where we may draw some lessons has to do with the impact of external factors on benefit-cost performance. We divide this topic into two parts, inflation and all other external factors.

Inflation has a "real" aspect and a "financial aspect." The real aspect is that it changes relative prices in the economy because all prices do not rise identically. This means that the input prices (raw materials, labor) that our microentrepreneur pays will almost surely rise faster or slower than the prices he can charge for his output, thus altering the inherent profitability of production. If the inflation is caused in large measure by import restrictions that raise the relative price of goods which are competitive with SSE products, it can lead to both expanded sales and larger unit profit margins. If it impinges more on spares and raw material costs, the reverse transpires. It is generally thought that inflation of the first type is more prevalent, so that microenterprises should be beneficiaries of rising average prices. The information available from the five case studies does not provide clear evidence one way or the other.

The financial aspect of inflation is far less ambiguous and in virtually all cases powerfully detrimental to project performance. It arises because governments and PVOs are

reluctant to set interest charges to be equal, at a minimum, to the rate of inflation. Said differently, inflation gives rise to negative real interest rates and high rates of inflation give rise to very large negative real interest rates. This has two deleterious effects. First, it imposes additional costs on the project in the form of correcting for capital erosion. Second, it creates an incentive for the borrower to divert his or her loan proceeds away from designated investment to a non-productive inflation hedge. Thus a rate of inflation that exceeds the projects' lending interest rate adds to costs and reduces measured benefits.

As seen in Table 8.2 inflation has added immense cost to UNO and FDR. In the case of FDR the \$33 million capital erosion cost alone equals nine-tenths of the aggregate benefit. Moderate rates of inflation in Upper Volta and the Dominican Republic greatly aided the relative performance of these two projects. The lesson is clear: unless the project designers are prepared to charge interest rates from 40 to 100% as required, lending projects should not be located in inflationary economies.

Judith Tendler notes in her evaluation report that the group she surveyed, food retailers, did not expand sales. She also noted that interest rates paid to depositors in commercial banks exceeded UNO's 28% and that some UNO borrowers might be tempted to dispense with their investment and collect the interest differential as has been done evidently with agricultural credit. An examination of those rates reveals that depositors could earn from 1978 to 1982 the following: 58%, 57%, 96%, 110% and 109%.<sup>1</sup> This yields a risk-free, work-free rate of return from diverting UNO funds ranging from 30% to 80%. It is hard to resist the conclusion that alert businessmen did so and on a large scale.

Other external factors share the same status as the real effects of inflation: their impact on project performance cannot be measured since, given our small sample, "all other things" are not "constant". Do microenterprise projects perform better in the higher income countries? Are they more likely to succeed in an expansionary or contractionary period? Does the opening up of new roads widen local SSE markets more than it attracts competition from outside producers? Do micro-enterprises fare better in "open" or "closed" economies as measured by the import-GDP ratio?

---

<sup>1</sup> Morgan Guarantee Trust, World Financial Markets, for the month of December.

Table 8.2

Inflation and Indirect Project Costs

1. Annual Inflation Rates

	<u>Honduras</u>	<u>U. Volta</u>	<u>Brazil</u>	<u>D. Rep.</u>	<u>Peru</u>
1972-74*	--	--	20.2%	--	--
1975-76*	--	--	36.4	--	28.6%
1977	8.4%	--	43.7	--	38.1
1978	6.2	8.2%	38.7	--	57.8
1979	12.5	15.0	42.7	--	66.7
1980	15.6	12.3	52.7	7.5%	59.2
1981	10.2	7.5	105.5	7.2	75.4
1982	9.6	--	--	--	--

2. Cost from Capital Erosion\*\*  
(thousands of 1982 dollars)

1972-74*	--	--	87.8	--	--
1975-76*	--	--	401.	--	10.6
1977	0.4	--	153.8	--	464.8
1978	4.2	1.2	133.7	--	1,449.2
1979	25.4	9.2	76.3	--	3,689.7
1980	37.5	11.5	327.7	3.8	5,708.6
1981	16.7	5.8	797.7	13.8	8,706.1
1982	<u>17.1</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>13,326.0</u>
	98.3	27.7	1,997.0	17.6	33,355.0

\*Average annual rate

\*\*Value of loans outstanding  $\times (1 - 1/1 + \text{inflation rate})$

Table 8.3  
External Parameters

	<u>Upper Volta</u>	<u>Honduras</u>	<u>Peru</u>	<u>Dominican Republic</u>	<u>Brazil</u>
% Labor in Agri. 1980	82	63	40	49	30
Life expectancy 1980 (yrs.)	39	58	58	61	63
% Adult literacy 1977	5	60	80	67	76
% Enrolled secondary school 1979	3	21	50	28	32
Population (millions) mid-1981	6.3	3.8	17.0	5.6	120.5
GNP per capita 1981 (US\$)	240	600	1,170	1,260	2,220
Savings/GDP 1981 (%)	-11	18	14	14	20
Gross Investment/GDP 1981 (%)	16	24	19	24	20
Growth in GDP 1970-81 (%)	3.6	3.8	3.0	6.3	8.4
Index of food production 1978-80 (1969-71=100)	95	82	83	94	117
Exports/GDP 1980 (%)	14	37	24	17	9
Imports/GDP 1980 (%)	34	46	13	20	11

source: IBRD, World Development Report 1983

Table 8.3 provides economic and social statistics comparing the structures of the five countries, per capita income and population, and finally, various performance indices on savings, investment, growth in GDP, food production and the external sector. Returning to our first question, do microenterprise projects perform better in high income countries, the soft answer that we might infer from Table 8.3 is "not exactly." The best performances are from IDH and DDF which occupy a middle position. While the market share of informal sector goods is high in very low-income countries, this favorable factor is offset by entrepreneurial limitations; in Brazil exactly the reverse holds. One might argue that it is in the \$500-to-\$1,500 per capita income range that the balance of these two opposing forces is most propitious to microenterprise expansion.

What about GDP growth rates? The decade average growth reported in Table 8.3 does not provide much help. The local economies in which most of the projects operated were experiencing expansion until about 1978-79, followed by contraction. The evaluation reports indicate that UNO and FDR in Brazil and Peru were strongly affected in both directions whereas DDF and IDH did not turn down with their national economies. The effects of the downturn on PFP and in Upper Volta appear to have been more than offset by another external factor, the opening up of new roads and hence new markets in outlying villages. The effect of an improving transportation network cuts in both directions for regional producers, opening up new local markets but also being opened up to high-quality "import" competition from SSE producers in the country's major urban areas. The market-widening effects dominate in the short-run, the competitive effects in the long run.

The last word in this tentative discussion of the effects of external factors upon project success is to note those macro-economic parameters which, rather surprisingly, do not seem to have any discernible impact. These include the strength of the food-producing agricultural sector, the country's capacity to save, the openness of the economy to imports and the health of the merchandise balance of trade. Perhaps a larger sample and evaluation reports more sensitive to these variables would vindicate the a priori logic which argues that these factors should be of consequence.

### Credit Delivery System

We will define the credit delivery system as encompassing all those activities which start with the lender first gaining knowledge about the universe of potential borrowers to final repayment of the loan or liquidation of collateral.

In the case of UNO (pre-1981) these activities were mostly carried out by the lender and included a neighborhood census of

micro-firms (one worker covering 15 firms a day), a selection visit to the firm to see if it fit UNO's criteria and was interested in credit, a diagnostic visit and an accounts-building visit. The latter was a requirement of the participating banks which provide the funding under a guarantee scheme. Because inflation cuts one-third to one-half off the real amount to be repaid, because repeat loans are available for those with good records and because serious delinquency results in the loss of one's national consumer credit rating, the need for post-loan supervision is minimal - on average but two visits.

In other delivery systems more of the activity is carried out by the borrower. This is the case in the group lending schemes (DDF's solidarity groups, PFP's women credit groups and Koulouga Cereal Bank) where both a portion of borrower screening and repayment enforcement is done by members of the group. The quasi-religious network utilized by IDH provides valuable borrowers screening information. While these borrowers-supplied services are "free," if they prove too costly to those who bear them to group breaks down, as in Upper Volta.

The most parsimonious delivery system is that of commercial banks, most closely approximated by Peru's FDR. The sequence is as follows: considerable documentation is submitted by the applicant, a single on-site visit by a bank technician, deliberation of the branch bank's Loan Committee (10 minutes per loan), postal follow-up on repayment performance and, where necessary, repossession of loan-financed assets. The delinquency rate in Peru is 8 percent.

The case studies yiled up a number of lessons about loan repayment. First, it is important that repayment schedules conform to th time profile of cash flow. Excessively short maturities for IDH and DDF microenterprise loans necessitated payback before the new sales appeared, 'automatically' causing arrears. On the other hand too generous schedules, as illustrated by DDF tricoleros loans, will often mean that the money that the money has been spent elsewhere when the due date arrives. A second lesson is that a flexible policy on loan repayment, one that takes into account transitory business setbacks, is not a good policy. Once leniency is perceived, no matter how well justified, it soon elicits from a large minority of borrowers calculating behavior that will eventually wreck the entire lending scheme. The 50% delinquency rate on Fada and its rapid reduction to 13% in 1982 once tough policies were instituted is the most dramatic example. Currently both DDF and IDH are suffering the consequence (arrears of 37% and 42% respectively) of a lax enforcement policy. Where the lender has incontrovertible evidence that the borrower's

TABLE 8.4: Attributes of Lending Process

	IIDI/IDH	PfP/UV	UNO/Recife	Micro- enterprise Component	DDF Solidarity Component	FDR/Peru
Pioneer Ventures	small percentage	small percentage	none	none	none	none
% Loans to New Business	71%	25%	0	0	0	0
Working K vs Fixed K	primarily fixed K	50% vs 50%	75% vs 25%	primarily fixed K	8% vs 92%	40% vs 60%
Repeat Loans	40%	25%	21%	0	0	yes
Education of Client (years)		little education	little or no education	10	4	
Collateral Requirements <sup>1</sup>	P,C (as of 1981)	none	C	P,O,C	P	P,O,C
Number of Visits: Before loan/After	1/20	several/25	4/very few	16/16	several/52	1/only if delinquent
Documents <sup>2</sup> to be Completed <sup>2</sup>	I,R	A,B,P/L,I	A,B,R	A,R	none	B,F,P/L,R
Processing Time <sup>3</sup> (days)				DT=30-60	AT=60-90 DT=30-60	AT=78 DT=32
Administrative Delays		none	bank processing delays; lengthy selection process	none	none	tensions be- tween FDR & BIP at branch level

<sup>1</sup>p=Property purchased through loan; O=Owner's personal assets; C=Co-signer

<sup>2</sup>A=Application; B=Balance Sheet; F=Feasibility Study, I=Impact Analysis; P/L=Profit/Loss Statement;  
R=Bookkeeping

<sup>3</sup>AT=Approval Time; DT=Disbursal Time

business is suffering, that it is suffering solely because of transitory external circumstances and that the borrower lacks the means of repayment from other sources of income, then in this comparatively rare instance the appropriate remedy is a rescheduling of the loan. Otherwise the lender's motto must be, reversing the priority widely observed in practice, "to be strict in the short-run is to be merciful in the long run." Merciful, because there will be a long run for all to enjoy.

Table 8.4 summarizes information on various aspects of the lending process for the five projects.

Before we leave the subject of delivery system design, we must mention a project not in our sample. The Badan Kredit Kecamatan (BKK) of Central Java in Indonesia suggests that several of the elements we have touched upon - reduced information requirements and repeat loans - if taken to an extreme might do the job all by themselves. One of the world's few self-sustaining SSE lending schemes, the BKK has made 2.7 million loans since 1972, totaling \$55 million.<sup>1</sup> Its clients, of whom 60% are women, are primarily petty village traders and handicraft workers. The loans are disbursed through 486 branches, each manned by a cashier and a bookkeeper. The effective annual interest charge is about 60% (inflation is 20%) and average loan maturity is five months. Bad loans run at approximately 6% of the portfolio.

The success of BKK is all the more striking as it appears to violate virtually every cannon of efficient design. Loans are made purely on the basis of character: no inquiry is made as to the viability of the intended use and no collateral is required. It is a public project (part of local government) and potentially subject to favoritism and political pressures (the sub-village chief approves all loans above \$8). No voluntary personnel or student staff (one-third of BKK employees enjoy civil servant status) are utilized. Borrowers with access to commercial banks are not excluded. The incentive for repayment is the prospect of future, larger loans; the typical client has had a dozen BKK loans.

What dare we conclude from such a stunning performance. Would the BKK model be equally successful for larger loans, for loans involving some fixed capital, for new enterprises? Would

---

<sup>1</sup> Through 1982. Unfortunately the BKK evaluation report was not available in time for the benefit-cost analysis. All information comes from Susan Goldmark and Jay Rosengard with the assistance of Nancy Straughan, Credit to Indonesian Entrepreneurs: Assessment of the Badan Kredit Kecamatan Program (Development Alternatives, Inc. U.S. AID: Washington 1983).

it succeed at a much smaller scale? We need more evidence to answer these questions. But what can be said is that the BKK experience re-enforces the central finding of this report that working capital loans for established enterprises represent a single "missing ingredient" with a high real rate of return. (40%-plus in Indonesia).

### Technical Assistance

Those involved with designing and implementing SSE lending schemes hold technical assistance in high regard. There are two questions here. Does a successful lending program require a supporting effort to strengthen the technical and managerial knowledge of the assisted entrepreneur? Second, can technical assistance alone -- as in the case of some of the activities of UNO and DDF -- perceptibly augment the performance of microenterprise units?

Investigation of public lending schemes during the 1960s and 1970s disclosed that many of the recipient firms did not fare well, and that managerial limitations were more often the binding constraint than capital shortage. The lessons of this finding, which pertained only to nontraditional ("modern") small enterprise, has been incorporated into the design of the new lending schemes aimed at the informal sector. The reasonableness of this extension was confirmed by all the research, which shows that microenterprise units seldom employ written records or other elementary forms of management control.

These inferences have proved invalid. The evaluation reports under review suggest that most forms of technical assistance so far tried are not "appropriate inputs" in that they do not have the potential to reduce costs. Granted that measuring the true influence of technical assistance is slippery business, in all but a few situations both the recipients and the implementers reported that the results were negligible. In the technological area the PVO generalists lack specialized knowledge. In the projects where students are used -- UNO and DDF -- their practical knowledge of any kind of commercial enterprise is far less than those they are helping. The standard formula they expound are found to be time-consuming to implement and without benefit. But even for the mature (PfP) or well-trained (FDR), the result is no different; the microenterprise does not gain from formal managerial methods, no matter how cleverly adopted to local conditions (PfP's color-coded boxes), simply because its business can indeed be carried in the entrepreneur's head. Written records add to the entrepreneur's vulnerability (claims of relative & tax collectors) with no compensating gain in profits.

The few exceptions where management assistance was reported to be beneficial had to do with new business (PfP & IDH) and the valued advice was not in bookkeeping or management technique, but in general planning - working through all the ramifications of a new enterprise. In the few cases where the former was mentioned it was for the largest, non-traditional firms. In all of the projects the initial level of technical assistance has been both curtailed and re-oriented.

As indicated in the preceding sections, we believe that virtually all the evidence points to a single missing ingredient, working capital. The success of these lending schemes conforms to an earlier finding, based on a benefit-cost analysis of eleven ILO/UNDP rural industry technical assistance projects (Kilby 1979). It was found that the multiple-input, integrated projects were largely failures, while the bulk of successful efforts involved uncovering a situation where there was a single missing ingredient. This "missing-ingredient hypothesis" has received more recent confirmation.<sup>1</sup> It would seem that working capital loans are yet another instance which supports the hypothesis.

#### Project Cost and the PVO Contribution

Various statistics relating to lending cost are presented in Table 8.5. These costs include technical assistance and the initial costs of exploration. This latter "start-up cost" was highest in case of PfP and lowest for DDF. The figures below -- the gross administrative cost per loan and cost as a percent of loan value -- are calculated from the statistics in Table 8.5.

	IDH	PfP	UNO	DDF(m)	DDF(s)	FDR
Expenditures/ loans given	\$947	\$1,238	\$1,249	\$739	\$242	\$531
Expenditures/ value of all loans	29%	186%	69%	44%	19%	9%

---

<sup>1</sup> See the studies cited in Tendler (1982), p. 135.

TABLE 8.5: Analysis of Lending Costs

	DDF					
	IIDI/IDH	PfP/UV	UNO/Recife	Microenterprise Component	Solidarity Component	FDR/Peru
Years of Program <sup>1</sup>	3	3.2	8	1½	1½	7
Size of Loan Fund (US\$s)	250,000	105,794				29,000,000
Loans Issued (US\$s)	517,768	276,869	4,626,300	169,721	200,310	42,331,200
Average Term of Loan <sup>2</sup> (months)	30		18	14	12	47
Number of Loans	161	416	2552	101	158	7110
Average Loan Size (US\$s)	3,216	670	1813	1680	1267	5961
Percent in Arrears <sup>3</sup>	42%	23% (plus 6% rescheduled)	8%	42%	33%	8%
Percent Unrecoverable <sup>4</sup>	15%	9%	13%	1%	5%	

Interest Income <sup>5</sup> (US\$s)	24,231	9905	1,082,223	7526	21,887	3,954,763
Expenditures	152,444	515,411	3,187,400	74,677	38,185	3,774,600
Initial Expatriates/ Locals/Field workers	1/1/1	2/0/2	0/3/1		½/6.3/3	
Final Expatriates/ Locals/Field workers	1/4/3	2/5/7	0/60/39		½/8.3/5	
Aggregate Expatriate/ Local/F.worker years	3/7/6	7/7.3/14.3	0/223/137		¾/9.7/5	
Staff vs non-staff expenditures	69% vs 31%	54% vs 46%	85% vs 15%		68% vs 32%	

<sup>1</sup>From beginning of actual lending operations through to end of evaluated period; <sup>2</sup>Exclusive of grace periods (usu. between 2 and 6 mos.); <sup>3</sup>This figure is the most current figure available on the outstanding loan portfolio; <sup>4</sup>Includes loans which are held as "unrecoverable" by the evaluators or the program, loans which are written off, and loans which are paid for out of a guaranty fund or on which the collateral is seized; <sup>5</sup>Calculated by the authors from available information.

1/30

Of the four PVO projects, PfP and UNO have the costliest delivery on the basis of these gross figures. Given that PfP loan size is also the smallest, its relative cost performance per dollar lent is even worse. These are both schemes in which the lender undertakes extensive activities. On the other hand the three projects which have the lowest administrative cost per dollar lent --DDF-Solidarity (19%), BKK (13%) and FDR (9%)-- are either characterized by minimum information requirements or have the borrower undertake these activities. Among the four PVO projects it is the latter approach, group lending, which has yielded the lowest administrative cost.

Clearly the group lending mode should be employed wherever it will work. Equally clear is that the necessary conditions are not often present: a well-defined, coherent group; a highly profitable market situation; a technically simple loan-financed asset that is invulnerable to mismanagement. Or such is what a comparison of the PfP and DDF experience would indicate. Further empirical research to isolate the minimum set of conditions for successful group lending is a high priority.

Another source of high cost is the use of expatriate staff (salaries, housing, international travel). This is one of the major sources of PfP's high relative cost. In very under-developed countries such as Upper Volta where local management personnel are scarce, one wants to design an extremely simple delivery system that can be staffed locally, if a reasonable level of cost efficiency is every to be attained.

Given that we have only two non-PVO projects, each of which appears to be exceptional, it is not possible to obtain a fair overall measure of the comparative performance of PVOs as implementing agencies. However the case studies permit us to make certain specific observations. First, at a senior level PVOs employ generalists rather than the more expensive professionals. As described in the UNO evaluation, the former are not only less costly than professionals in business administration, they are also technically better suited to handling the informal problems of the informal sector. More critically, owing to the extra-economic income gained by PVO participants, their services are obtained at a far lower money wage. These same two factors make it possible to recruit and utilize student labor, achieving yet further monetary economies. Finally, their non-pecuniary objectives means that PVPO staff interact well with the poor and are motivated to go through the unpleasant business of seeking them out, organizing them for group lending, and the like. Thus, as the high learning phase of microenterprise lending is completed and the most efficient delivery systems are identified, we would expect PVOs to possess a substantial comparative advantage as the implementing medium for these projects.

BIBLIOGRAPHY

I. Primary Sources

Ashe, Jeffrey, Assisting the Survival Economy: The Microenterprise and Solidarity Group Projects of the Dominican Development Foundation, ACCION International/AITEC: Cambridge, MA 1982.

Bear, Marshall; Jackelen, Henry; Tiller, Michael; Hill, Dong, Microenterprise Development in the Urban Informal Sector: Case Studies from Brazil and the Philippines, A.T. International.

Coelho, Lielson and Fuenzalida, "An Appraisal of UNO Programs in Bahia and Recife: Preliminary Results," Universidade Federal da Bahia, May 1980.

Fraser, Peter H.; Tippett, Bruce A., Impact Evaluation: IDH Honduras, 1982.

Goldmark, Susan; Mooney, Timothy; Rosengard, Jay, Aid to Entrepreneurs: An Evaluation of the Partnership for Productivity Project in Upper Volta, Development Alternatives, Inc., Washington, 1982.

Goldmark, Susan; Deschamps, Jean-Jacques; Recinos, Joseph; Clover, Beatriz, An Impact Evaluation of the Industrial Bank of Peru's Rural Development Fund, Development Alternatives, Inc., Washington, 1982.

Goldmark, Susan and Rosengard, Jay, Credit to Indonesian Entrepreneurs: An Assessment of Badan Kredit Kecamatan Program, Development Alternatives, Inc., Washington, 1983.

Lassen, Cheryl A., A Response to the DAI Evaluation of PFP/Upper Volta, Partnership for Productivity, International, Washington, 1983.

Schiller, John, Rural Enterprise Development Project: Final Report, Partnership for Productivity, Washington, 1982.

Tendler, Judith, Ventures in the Informal Sector and How They Work Out in Brazil, A.I.D. Evaluation Special Study No. 12, Office of Private and Voluntary Cooperation, Bureau for Food for Peace and Voluntary Assistance, U.S. Agency for International Development, March 1983.

## II. Secondary Sources

- Anderson, Dennis, "Small Industry in Developing Countries: A Discussion of the Issues," World Development, November 1982.
- Aryee, George, Small-scale Manufacturing Activities: A Study of the Interrelationships Between the Formal and the Informal Sectors in Kumasi, Ghana, International Labour Office, Geneva, 1977.
- Chuta, Enyinna and Liedholm, Carl, "Rural Non-Farm Employment: A Review of the State of the Art," MSU Rural Development Paper No. 4, East Lansing, 1979.
- Davies, Amar and Fisseha, Yacob, "The Small Scale Manufacturing Enterprise in Jamaica: Socio-Economic Characteristics and Constraints," MSU Rural Development Paper No. 16, East Lansing, 1981.
- Farbman, Michael, ed. The PICES Studies: Assisting the Smallest Economic Activities of the Urban Poor, A.I.D. Washington, 1981.
- Fowler, D.A., The Informal Sector of Freetown (Sierra Leone), International Labour Office, Geneva, 1978.
- Haggblade, Steve, "Africanization from Below: The Evolution of Cameroonian Saving Societies into Western-Style Banks," Rural Africana, Fall 1978.
- Jurado, Gonzalo; Castro, Judy, The Informal Sector in the Greater Manila Area, 1976: An Overview, International Labour Office, 1978.
- Kilby, Peter, "Evaluating Technical Assistance," World Development, March 1979.
- Kilby, Peter, "Small Scale Industry in Kenya," MSU Rural Development Paper No. 20, East Lansing, 1982.
- Levitsky, Jacob, "Assessment of IBRD SSE Lending Project," IBRD, Washington, July 1982.
- Liedholm, Carl and Chutta, Enyinna, "The Economics of Rural and Urban Small-Scale Industries in Sierra Leone," MSU African Rural Economy Paper No. 14, East Lansing, 1976.
- Sethuraman, S.V., ed., The Urban Informal Sector in Developing Countries, International Labour Office, Geneva, 1981.
- Stallmann, Judith I., Pease, James W., Rural Industrialization Policy and Programmes in Honduras: A Preliminary Assessment, International Labour Office, Geneva, 1980.

Tendler, Judith, Turning Private Voluntary Organizations Into Development Agencies: Questions for Evaluation, U.S. Agency for International Development, Washington, April 1982.

Wilcock, David and Chuta, Enyinna, "Employment in Rural Industries in Upper Volta," International Labour Review, Vol. 121, No. 4, July-August 1982.