

Thinking About the Performance and Sustainability of Microfinance Organizations

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I. Introduction

This document presents a framework for thinking about the performance and sustainability of subsidized microfinance organizations. A *framework* is a guide to analysis. It suggests questions, highlights the links among questions, and proposes ways to answer the questions. The goal is to improve social welfare by measuring performance better.

The performance of MFOs bestows benefits and inflicts costs on five groups: customers, society, donors, managers, and investors. Each group has its own goals, so each group asks its own questions about performance. No single measure informs all the questions, nor does any single measure give all the useful information for any single question. Humans must analyze many measures to come up with ways to improve performance.

This chapter gives measures that inform the questions drawn from the goals of each group. The measures differ in the resources with an opportunity cost, in the opportunity cost itself, and in the time frame. This framework nests the traditional framework in the field, the Subsidy Dependence Index (Yaron, 1992a and 1992b).

Sustainability is defined as repeating performance in the future. Such permanency requires a flexible organization and a structure of incentives to maintain performance in spite of changes in the environment. Judging measures as they stretch into the future is qualitative and so takes human work and smarts. No quantitative measure is sufficient for self-sustainability.

Performance is progress in reaching the mission of microfinance. The mission is to make the lives of poor people better by producing *outrreach*, loans and deposits used by the poor. Measuring performance sparks better performance and casts light on bad performance (Von Pischke, 1991). Measuring performance from points of view other than that of society matters because society is not the only stakeholder in the MFO. Measurement is worthwhile if the benefits of better performance are more than the costs of measurement.

The chapter builds on the logic of the traditional SDI (Yaron, 1992a and 1992b) and of the plethora of formats that followed (*e.g.*, Christen, 1997; Rosenberg *et al.*, 1997; Alfaro, 1996; Holtmann and Mommartz, 1996; SEEP, 1995, Christen *et al.*, 1995; Benjamin, 1994; Inter-American Development Bank, 1994; Rosenberg, 1994). One goal of the explicit framework in this chapter is to halt the spread of variant strains of indicators and interpretations.

The next section characterizes MFOs. The next two sections discuss the concept of *analysis* and the distinction between the concepts of *subsidy* and of *subsidized resources*. The section after that discusses measuring performance from the points of view of each of the five groups with a stake in an MFO. The last section discusses sustainability.

II. The characteristics of MFOs

Society funds MFOs hoping to improve the lives of poor people by cutting the cost of

loans and deposits. Even though the poor do not have much money, they still save and borrow in small amounts. There would not be any MFOs without funds from society because handling small loans and deposits is costly.

Like Robin Hood, society takes from the rich and gives to the poor through microfinance. Governments take resources from rich taxpayers in high-income countries and, through donors, fund MFOs which then sell financial services to the poor in low-income countries. Costs for poor customers would be higher without MFOs. Subsidies are the price paid by society to buy outreach for the poor in hopes of increasing their welfare.

Helping the poor through an MFO costs society because funds entrusted to an MFO have an opportunity cost—they could have been used to help the poor in other ways, or they could have been kept by taxpayers. Donors want the biggest bang for the buck because the poor are many but the donor dollars are few. This is true whether society is earmarking funds for microfinance instead of other development projects or whether donors are allocating funds earmarked for microfinance among MFOs.

As firms go, MFOs are oddballs. MFOs get revenue both from sales and from subsidies. The product of MFOs is aimed at the poor and involves money, just what the poor lack. Often MFOs are staffed by people without backgrounds in banking. Donors like MFOs because entry into lending is cheap—all it takes is money.

MFOs and profits

Even though most MFOs are non-profits without owners, profits matter for at least five reasons. First, profits matter because society is unwilling to fund MFOs to the point of saturating the market and using up all the gains from more outreach (Rosenberg, 1994). If the profits of an MFO could attract private capital, then microfinance would mushroom. Donors could leave MFOs alone, and there would be more outreach. Social benefits would skyrocket, and social costs would shrink. Profits are needed to enlist private capital for microfinance.

Second, profits matter for sustainability and permanence, and permanence matters for repayment. Poor people will take low profits as proof that the MFO is sick, and they will stop repayment. This weakens the MFO unto death, and a dead MFO does not help poor people.

Third, profits matter because access to subsidized resources waxes and wanes with the whims of donors. Donors tire, and their moods swing. Funds fade as fads fizzle. An MFO without profits will shrink and die when donors withdraw. An MFO with profits can live grow without donors, and life and growth means more help for more poor people.

Fourth, profits matter because they are funds that the MFO could pay as compensation to society for subsidized resources. If an MFO could pay society for the resources entrusted to it, then the MFO is worthwhile from a social point of view because it benefits for the poor at no cost to society.

Fifth, profits matter because society cares about the poor both now and in the future. Profits promote repayment and permanence. If losses cause the MFO to collapse, then the poor in the future do not get the same outreach as otherwise. Losses from non-repayment benefit the poor now, but such gifts are better given as grants than disguised as loans (Adams *et al.*, 1984).

Pricing affects profits and performance. No one will repay loans that cost too much (Stiglitz and Weiss, 1981), and the rich will take loans that cost too little (González-Vega, 1977).

Most MFOs are not profitable. Their prices are too low, and/or their costs are too high. Without help from donors, most MFOs could not pay expenses with revenue from operations. This scares investors. In most cases, MFOs are born with help from donors, and they survive only

with more help.

MFOs are odd. They need subsidies, but they need to outgrow them. MFOs are non-profits, but they need profits. MFOs do not have owners, but they need to attract them. MFOs are not private, but, they need to act as if they were. MFOs help the poor by charging enough to pay costs.

MFOs are too odd to fit in traditional frameworks. For example, financial statements do not inform questions about performance. Return-on-equity is meaningless without owners. In addition, revenues are inflated with grants, and expenses are deflated by subsidies on subsidized resources from donors.

III. Subsidies and subsidized resources

The concept of *subsidized resources* is not the same as the concept of *subsidies*. Donors entrust subsidized resources to the MFO at a price below the opportunity cost of the resources. Subsidy is the difference between the opportunity cost and what the MFO pays. Subsidy cannot be negative, and all resources from donors are subsidized. An MFO would not hassle with a donor if it could trade on the market at the same price.

Suppose society lends an MFO L for a year at an interest rate of c . Suppose $m < c$ is the opportunity cost of resources in a loan of like risk from some point of view. The subsidized resources gained by the MFO as a result of the loan is the difference between the opportunity cost and what is paid, $L \cdot (m - c)$. The subsidy from the use of the subsidized resources for a year is not $L \cdot (m - c)$ but rather $m \cdot L \cdot (m - c)$. The L lent must be repaid and is neither subsidy nor subsidized resource.

The concept of *subsidized resources* is linked to the concept of *subsidies*. Subsidies from the use of subsidized resources become subsidized resources themselves.

Suppose an MFO got $m \cdot L \cdot (m - c)$ as a subsidy in a period. If the MFO were unsubsidized, it would pay this $m \cdot L \cdot (m - c)$ in the period, and it would need to increase its average debt in the period by $m \cdot L \cdot (m - c) / 2$ to keep from shrinking. It would pay $m^2 \cdot L \cdot (m - c) / 2$ for this extra debt. The $m^2 \cdot L \cdot (m - c) / 2$ is also a subsidy since it is a cost an unsubsidized MFO would have to pay.

Ways an MFO can get subsidized resources

Three of the six ways an MFO can get subsidized resources are explicit, and three are implicit (Figure 1). The MFO gets subsidized resources explicitly when a donor gives the MFO more funds in the present period. Explicit transfers are grants as equity, grants as revenue, and discounts on operating expenses. The MFO gets subsidized resources implicitly when it does not pay the opportunity costs on subsidized resources or on debt. Implicit transfers are discounts on debt, subsidies on capitalized subsidies, and positive profits.

When donors leave, MFOs do not repay anything except debt. But MFOs do not get any more new transfers except repeatable ones. Four of the six ways an MFO can get subsidized resources are non-repeatable, and two are repeatable (Figure 1). Non-repeatable transfers end when a donor leaves. Non-repeatable transfers are grants as equity, grants as revenue, discounts on operating expenses, and discounts on debt. Repeatable transfers do not end when donors leave. Capitalized subsidies and positive profits keep making subsidies because donors leave them behind.

The first way an MFO can get subsidized resources is explicitly as a cash grant accounted for as equity (Figure 1). The subsidy is not the grant itself but rather the opportunity cost of the subsidized resources from the grant. The opportunity cost is the opportunity cost of equity from the point of view of a given stakeholder.

Second, an MFO can get subsidized resources explicitly as a cash grant accounted for as revenue. All grants should be counted as equity injections. Grants are not really revenue because they are not from the MFO's business operations. Still, some MFOs count grants as revenue. The MFO might claim that grants are not equity because they are not a residual claim on the MFO by donors, or the MFO might argue that grants are revenue from donors' buying outreach. The MFO might also say that grants are tied to specific expenses that would not otherwise be made. But counting grants as revenue misleads because it inflates profits. Equity changes the same whether grants are accounted for as revenue or as equity injections. As always, the subsidy is not the grant itself but rather the unpaid opportunity cost of the extra equity from the grant.

Third, an MFO can get subsidized resources explicitly as discounts on operating expenses due to a donor's paying for something for the MFO. These are grants in kind. Examples are travel, training, technical assistance, cars or computers. Such purchases are discounts on operating expenses only if the MFO does not record the full price as an expense and, in the case of assets, if the MFO does not record the asset in the accounts. Otherwise, the transaction is either unsubsidized or is one of the other five ways of getting subsidized resources. Discounts on operating expense increase equity just like grants. The subsidy is the unpaid opportunity cost on the extra equity.

Fourth, an MFO can get subsidized resources implicitly as discounts on debt. The discount is the difference between the market price for debt of like risk from private lenders and the price the MFO paid to donors. The discount is not the subsidy. The subsidy is the opportunity cost of the use of the subsidized resources from the discount. The discount increases equity by increasing profits by reducing expenses.

Fifth, an MFO can get subsidized resources implicitly as capitalized subsidies. Discounts on subsidized resources are themselves subsidized resources. Past subsidies for which the MFO has not yet reimbursed society are subsidized resources in the present with an opportunity cost. They are like equity injections. If an MFO paid the opportunity cost of its resources, it would have to get more resources to replace those lost in payments, and those resources would have still more costs.

Sixth, an MFO can get subsidized resources implicitly as positive profits. Positive profits belong to owners. If they are not withdrawn but left as positive retained earnings, then they have an opportunity cost just like any other form of equity. This makes sense. But if true profits are negative, then having an opportunity cost does not make sense. Negative profits are not claims by the MFO on owners. Negative profits do not decrease what the owners invested in the MFO. Negative profits do not have an opportunity cost for anyone.

The framework of the traditional SDI (Yaron, 1992a) wrongly counts negative profits as negative subsidized resources (Schreiner, 1997a). Suppose a donor grants \$100 to a new MFO as equity on the first day of a period and that the MFO makes a profit of -\$100 in the period without getting any other subsidized resources. The traditional SDI says the subsidy was zero even though the MFO would have paid $\$100 \cdot m_{et}$ if it did not have subsidized equity.

Subsidized resources are the resources the MFO gets from donors. Subsidized equity is the sum of the six forms of subsidized resources. Each of the six forms increases equity relative to the unsubsidized case. Subsidized resources are not repaid. Their opportunity cost is the opportunity cost of equity. If profits in any period would have been negative without subsidies, then subsidized equity will be more than accounting equity. This is the usual case.

A disbursement of debt by donors is not itself a transfer of subsidized resources. The transfer of subsidized resources comes from the discount on the debt, the difference between what the MFO pays to the donor and the opportunity cost. The discount stands for resources the MFO keeps for its own use instead of paying to the donor. The subsidy is not the discount itself but rather the opportunity cost of the discount. After all, the MFOs must repay the debt. Donors do not give the resources in a loan to an MFO forever, they just entrust them to the MFO to use for a while. But the donors do let the MFO keep the discount forever.

Why the form of subsidized resources matters

The form of subsidized resources matters even though all six forms of subsidized resources have the same opportunity cost from a given point of view. For example, the political

maneuvers needed to make an explicit transfer are not the same as those needed to make an implicit transfer. In addition, only non-repeatable transfers stop when donors leave. Another example is that MFOs may spend cash without strings wisely but they would not absorb the value of a training session that cost the same amount.

Besides the distinctions between explicit and implicit and between repeatable and non-repeatable, the form of subsidized resources matters in general for at least five other reasons. First, discounts on operating expenses often change the technology for the production of outreach. This shifts the average-cost curve down. Donors not only want to shift the average-cost curve down but also to make it fall more steeply as the MFO grows. A donor might pay for loan officers to be trained in a certain lending method or for managers to attend talks inculcating ideas the donor likes. The donor could also buy assets such as buildings or computers.

Second, grants of cash as either revenue or as equity increase the fungible funds the MFO can use. Growth slides the MFO along an average-cost curve. If all is well, costs fall.

Third, grants of cash as equity may give donors more control over the MFO if the donors get shares in return. Shares provide donors with a control over time unlike that from any other form of subsidized resources. For example, the influence from grants as revenue fades fast unless the donor dangles more grants to tempt the MFO. Having owners may also help the MFO qualify for prudential regulation and supervision, required for the safety of the deposits of the poor.

Fourth, the resources from grants in cash can be used to lend more. In contrast, grants in kind might not lead to more lending if there are non-fungibilities. So grants in cash may dampen any wish of the MFO to get funds from deposits or from commercial lenders. In general, the form of subsidized resources affects incentives.

Fifth, discounts on operating expenses may pay for intangible assets, such as training of loan officers, that are not recorded in the accounts but which bear fruit over time. In general, discounts on operating expenses let donors target specific cogs in the productive capacity of the MFO, both in the present and in the future, in a way the other forms do not. If a donor decides an MFO needs flexibility, it can give them training. Giving cash without strings attached would not have the same effect.

In general, it is better for donors to give subsidized resources in the form of discounts on operating expenses instead of cash. This lets donors fine-tune the production technology while bestowing long-lasting, intangible assets. If donors must give cash, they should buy shares. Whatever the form of the subsidized resources, donors can make transfers conditional on performance goals and on pricing that will lead to profits.

This framework, like that of the traditional SDI, cannot distinguish between subsidy passed on to customers, subsidy wasted by management, and subsidy invested in productive capacity. But, if an MFO is several years sold, a human analyst might be able to judge the case. If subsidies are invested, then subsidies should fall steadily. A big gap between the actual interest rate and the subsidy-free interest rate would be a clue of wasted subsidy. A low on-lending interest rate hints that subsidy is passed on to customers.

IV. Analysis of subsidized MFOs

Analysis is a tool that gets information from data to help answer a question that matters to someone. *Qualitative analysis* makes subjective measurements in ways that can be learned but not taught. *Quantitative analysis* makes objective measurements in ways that can be learned and taught.

Analysis is human. The *analyst* is a particular person who makes assumptions, who collects, manipulates, and interprets data, and who documents the process and the information. Teasing information from data takes human skill because the process is holistic, synthetic, and idiosyncratic.

Qualitative analysis depends on the personality, experience, intelligence, and performance of the particular analyst. Every case is a special case, and there is no small set of principles useful in all cases. Frameworks guide qualitative analysis with lists of questions and topics for discussion and observation. The collection and manipulation of qualitative data takes, besides time and effort, experience and intelligence. These inputs vary among analysts. Getting them is costly.

The data and manipulations of quantitative analysis are standard enough to be taught. Only the interpretation of the data and the synthesis of information depend on the particular analyst. Although special cases exist, there is a small set of principles useful in most cases. Frameworks for quantitative analysis specify what data to collect and how to manipulate it. This requires, in addition to time and effort, knowledge of a standardized process. These inputs may be rare and expensive, but they are not as costly as those needed for qualitative analysis.

Analysis of the performance and sustainability of MFOs is qualitative. Sustainability depends on future performance, and future performance can only be guessed by a human, informed by past and present performance and by a holistic understanding of the MFO and of MFOs in general.

Good analysis is constructive. It uses measures of performance in the past and in the present to suggest how to get to a given level of performance in the future (Inter-American Development Bank, 1994). Good analysis also shows the technological and organizational changes needed. It tells whether subsidies are likely to help or hinder, how much subsidy is just enough, and what forms of subsidized resources are likely to be best.

The indicators used in analysis should tell what to change and how much to change. Useful indicators are also tools to mark progress and to set goals. Any change in performance forecast for the future should be supported by evidence that the MFO is willing and able to change along a margin both that has room for change and that is controlled by the MFO.

Good analysis looks to the future because that is where change can be, but good analysis is grounded in the present and in the past. The future is unknown. The best forecast of the future is the present; the next-best forecast is the past.

Looking at future performance requires assumptions from the analyst. Performance can be assumed not to change from the last period, to have the same rate of change as in the last period, to have the same level of change in the last period, or to be no better than the best MFO but no worse than the MFO is now. Whatever the choice, it is the best guess of a human after weighing many factors.

Choices in the past and present also affect the future. Costs depend on accumulated assets, both tangible assets such as computers and intangible assets such as wisdom. Subsidized resources also accumulate. Donors should demand more now from those MFOs who got more help in the past.

Just like all new firms, all new MFOs lose money. It takes time and growth to dilute start-up costs, to hone production technology, and to exploit economies of scale. But unlike most old firms, almost all old MFOs keep losing money. This means that improved performance in the past and in the present usually will not be good enough to ensure good performance in the future. It takes human skill to forecast this.

Analyzing progress over time takes benchmarks and peer comparisons (Koch, 1992; Christen, 1997). If few MFOs are at their goals, then their progress matters more than their state. But the speed of progress is hard to judge without benchmarks through time.

The analysis should cover the whole life of the MFO so as to compare the trajectory of the MFO with benchmarks. Data should be monthly or quarterly. This helps monitor progress and also signals the quality of the MFO—donors in triage should skip MFOs who cannot make monthly or quarterly reports. Such data would also allow for accurate annual averages of stocks even when growth is fast. Indicators should be based on 12 months of data. This creates recognizable units and cancels the sharp seasonality of the operations of most MFOs.

Trends are patterns of change in measures of performance. Trends matter if the absolute levels of performance are not yet high enough. An MFO that says it plans to improve should already have a track record of quick, steady improvement, given its age, the market, and the help it has already got. Donors should create *pro forma* performance projections based on benchmarks and make more funds in the future contingent on progress in line the plan.

Levels also matter. Improvement is not enough, and improvement matters only as it signals the likelihood of reaching absolute goals. Levels and trends must be judged together. Two MFOs may have the same level of performance, but one may be younger and has improved faster and with less help than the other. Or two MFOs may be improving at the same rate, but one is very small and changing over a base of poor performance, while the other is huge and changing over a base of good performance.

V. Measuring performance from the points of view of stakeholders

Five groups have stakes in the performance of an MFO: customers, society, donors, managers, and investors (Figure 2). Each of the five groups has its own goal, and so each group asks its own question about performance. Each group has its own opportunity cost for the resources that it entrusts to the MFO. Some groups care only about performance from now on, but some groups also care about performance from birth on. Finally, each group has its own measure of performance. Even though the goals and thus the measures of the groups of stakeholders differ, they are still related in many cases (Figure 3).

Performance from the point of view of customers

The *customers* of an MFO are poor borrowers and poor depositors in low-income countries. The customers see the MFO as an alternative source of financial services. The poor could use informal financial services such as loans from relatives or from moneylenders (Adams and Fitchett, 1994). The poor could save by making deposits in commercial banks or by stuffing cash in the mattress.

Surplus from the MFO is the difference between the benefits less costs of using the MFO and the benefits less costs of not using the MFO. The goal of customers is to maximize their own welfare by maximizing surplus (Figure 2). Poor people use the MFO if the surplus is positive. Benefits include not only interest on deposits but also higher returns from production, smoother consumption, and the relaxed constraints in general caused by credit, the simple ability to get debt even if no loan is ever asked for (Morduch, 1995; Schreiner *et al.*, 1995a; Besley, 1995). Surplus from default is not counted because default is stealing. Presumably stealing is not an option without the MFO.

Customers do not care where the MFO got its funds, nor do customers about past performance. Customers just care about themselves. If customers get positive surplus from using an MFO, then they will use it repeatedly. If they do not use it repeatedly, they must be doing better elsewhere. From the point of view of customers, good performance is measured by repeated use. If customers care about their own welfare, then they can be trusted to measure the performance of the MFO from their point of view. No analyst is needed. But Figure 3 shows that repeated use and good performance from the point of view of customers does not guarantee good performance from any other point of view.

One-shot use is not a good measure of the performance of an MFO from the point of view of customers. Although poor people will not use an MFO even one time if they do not expect to get more surplus than they could get elsewhere, expectations are sometimes wrong. For example, debt could turn out to be more burdensome than was expected.

Performance from the point of view of society

Society is all people. The goal of society is to maximize social benefits less social costs because society cares about the welfare of all people in the world (Figure 2). MFOs are one way to do this. If society cares more for helping the poor in low-income countries than about hurting the rich in high-income countries, then the weight of the benefits enjoyed by the poor w_p will be more than the weight of the costs borne by the rich w_r .

MFOs make benefits for the poor by lowering the price of financial services. A lower price means lower costs for customers and so a bigger surplus. Social benefits are the sum of the surpluses enjoyed by customers.

MFOs make costs for the rich because giving to MFOs means taking from taxpayers. Resources paid in taxes could have been used by their owners for their own benefit. Social costs

are the opportunity costs of resources entrusted to MFOs from the point of view of taxpayers.

Society asks the question of whether funding MFOs increases social welfare. Funds given to one MFO have an opportunity cost because they could have been used to fund another MFO, used on some other development project, or even kept by taxpayers. The opportunity cost of the use of funds from taxpayers probably is between 3 to 10 percent per year. A good proxy is the long-term rate on safe investments such as government bonds.

Society cares about performance both from birth on and from now on. Performance from birth on matters because society hopes to get more from those MFOs to whom it has given more. Given the age of an MFO and its environment, poor performance in the past compared to other MFOs may be a clue that donors should leave.

Performance from birth on also matters because subsidizing MFOs is a gamble. If most MFOs have performed poorly in the past, then society might want to stop funding them in order to bet at some other development game that might increase social welfare more. Without help from society, there would be no MFOs, so all benefits made by the MFO from birth on are caused by the social costs from birth on.

Society also cares about performance from now on. Taking past costs as sunk, further funding may increase social welfare more than other options could. From this point of view, the extra funding causes only those benefits that would not happen without the extra funding.

A *worthwhile* MFO has a positive discounted expected value of the stream of social benefits less social costs from some point in time. Benefits less costs tests worthwhileness from the point of view of society.

Worthwhileness from the point of view of society does not imply good performance from any other point of view except that of repeated use from the point of view of customers (Figure 3). Customers count only benefits to customers. Society counts both benefits to customers and costs to taxpayers.

Measuring social costs, at least in the past, is cheap (Schreiner, 1997a). Social costs are the subsidies from the point of view of society on the subsidized resources entrusted to the MFO. In any period, social cost is measured by the modified measure of subsidy in the long run in using the opportunity cost of society. The formula for S_t^{ML} in (2) below is from Schreiner (1997a). Over T periods, social cost is the sum of these periodic measures in constant units and discounted at a rate δ .

Measuring social benefits, even in the past, is costly (Von Pischke and Adams, 1980; David and Meyer, 1983). This is true even if social benefits are known to be positive because customers use the MFO repeatedly. The cost of measuring benefits is high, but it is falling (Pitt and Khandker, 1996; Hulme and Mosley, 1996; Khandker, 1996).

Luckily, social benefits are a multiple of average debt, and measuring average debt is cheap. Figure 4 has a standard supply and demand diagram. The horizontal axis is the quantity of debt (or of deposits) in units of dollar-years outstanding. The vertical axis is the cost per dollar-year of debt outstanding to customers. Cost includes r , the interest paid to the lender, and c , the transactions costs borne by the borrower. The quantity Q borrowed is the minimum of supply and demand at a given rate of interest and a given level of transaction costs (Schreiner *et al.*, 1996; Duca and Rosenthal, 1993; Maddala and Trost, 1982; Avery, 1981).

The borrower's surplus is the area in the trapezoid outlined by the demand curve, the vertical line at Q , the horizontal line at $r+c$ and the vertical axis. For a given borrower, average surplus per dollar-year outstanding b is the height of the rectangle whose area is the same as that

of the trapezoid.

This unknown b is a measure of willingness to pay for loans or willingness to accept for deposits. Pseudo-benefit-cost analysis looks at what b would have to be to make the discounted value of benefits more than the discounted value of costs.

Pseudo-benefit-cost analysis recognizes that while the goal of society in funding an MFO is to maximize social benefits less social costs, it is cheap to measure social costs but costly to measure social benefits. If the benefit-cost rule were judged itself by a benefit-cost rule, measuring costs without benefits might beat measuring both benefits and costs.

Let LP_t stand for the average loan portfolio in period t . Given that subsidies S_t^{ML} [see (2) below] are a lower bound on social costs, then an expression for b , a lower bound on the average surplus per dollar-year outstanding for the average borrower or depositor needed to make social benefits just equal to social costs, is:

$$b = \frac{\sum_{t=1}^T \delta^t \cdot w_r \cdot S_t^{ML}}{\sum_{t=1}^T \delta^t \cdot w_p \cdot LP_t} . \quad (1)$$

If b is small, then a benefit-cost analysis at time 0 with the knowledge up to time T would probably have judged the MFO to be worthwhile from the point of view of society. How small is small needs human discussion, as do the choices of the weights and the discount rate.

Estimates of the marginal benefit to borrowers of using an MFO could be compared to b . For example, Schreiner (1997a) and Morduch (1997) use Khandker's (1996) estimate of the extra annual household expenditure caused by an extra dollar-year of debt to judge whether the Grameen Bank of Bangladesh has been worthwhile. Gale (1991) used pseudo-benefit-cost analysis is used to judge the worthwhileness of subsidized debt in the United States.

Required surplus b can also be compared to the difference between these estimates and the effective interest rates plus transactions costs for the borrower (Schreiner, 1997b). In addition, b can be compared to the difference between the cost of debt from an MFO and the cost of similar debt from other sources. This difference is a lower bound on the debtor's surplus. In general, people must judge whether b is so small that the debtor's surplus is likely to be more.

Pseudo-benefit-cost analysis from a point in the past to the present is cheap because all the

data needed to find costs are known. Pushing pseudo-benefit-cost analysis into the future costs more and is less accurate. The ideas are the same, but the data must be forecast. Such an analysis might be useful because, even if funds sunk into an MFO in the past have not been worthwhile, society still wants to know if further funding would be worthwhile.

Taxpayers fund MFOs, but taxpayers are too diffused for any of them to find it worthwhile to measure the performance of the MFO from their own point of view. MFO performance has to be too bad for too long before it changes taxpayers' voting. Discontent wends its way too slowly from voters to government to donors to MFOs to voters to avoid huge waste. Waste is stopped quickly only if government or donors ask an analyst look at performance on the behalf of society.

Performance from the point of view of donors

Donors give to MFOs funds taken from taxpayers by government. Just like society, the ostensible goal of donors is to maximize social benefits less social costs (Figure 2). Altruistic donors would use the same measures as society.

But donors are organizations staffed by people. These people want to help the poor, but they also want to keep their good jobs and to climb the career ladder. In some cases, the goal of donors is to help the poor while moving money and while being linked to MFOs judged as good.

One way to do this is to make microfinance big. Given a budget, donors want to buy as much microfinance as they can. Several donors seem to espouse the goal of saturating the market for microfinance. For example, Christen (1997) says, "Profitability is a means for achieving the programs' ultimate social objective: delivering efficient financial services to as many poor clients as possible" (p. 25).

Rosenberg (1994) justifies this goal. He notes that the MFOs are many but the donor

dollars are few. Rosenberg assumes that donors have the tools to take worthwhile MFOs to masses of the poor but that donors do not have the funds to saturate the market. He then reasons that donors should therefore give funds in ways so as to make the MFOs so profitable that they can leverage funds from donors with funds from the market.

Christen *et al.* (1995) follow this thought: “In principle, donors should take a perspective very similar to that of a private investor wishing to generate high ‘returns’ on investment, with the difference that donors measure their returns in terms of outreach achieved rather than in profit. A central question for donors is thus: ‘If a donor puts one dollar into a microfinance program today, how many dollars in microfinance loans will be in clients’ hands several years hence’ ” (p. 12).

The language of Rosenberg (1994) hints that “the magic of full licensed leverage” (p. 11) is like a miracle, like getting something for nothing. According to Rosenberg, “There seems to be a kind of law of the loaves and of the fishes at work in microfinance” (p. 8). For example, at the highest level of his typology based on commercial leverage “the donor’s original dollar would catalyze an indefinitely large amount of resources... this level... is Nirvana” (p. 4). At this level “the program will deliver these benefits, year after year, *at no cost* [italics original], beyond two or three years of start-up losses.”

This is not necessarily hyperbole. The goal of making microfinance big might dovetail with the goal of society to make microfinance worthwhile; if MFOs are socially worthwhile, then big MFOs are even more worthwhile.

Commercial leverage answers the question of donors of how much extra finance for the poor is sparked by an extra dollar of subsidized funds. Commercial leverage is the ratio of the average non-subsidized resources in a period over the average subsidized resources in a period (Schreiner and González-Vega, 1995; Rosenberg *et al.*, 1997). The formula is in Schreiner

(1997a).

Maximizing commercial leverage would maximize the amount microfinance for a given level of donor help. It would also let donors move funds while giving them incentives move funds in forms that let the MFO build its ability to live without funds from donors. This is good; it could help MFOs reach more poor people at a lower social cost than otherwise.

Unlike society, donors assume that helping MFOs is worthwhile from the point of view of society. If MFOs are assumed worthwhile, then society is wasting its time asking whether or not to earmark funds for microfinance. If MFOs are worthwhile, then society should ask with donors how best to allocate funds already earmarked for microfinance. If benefits of MFOs are more than the costs, then maximizing the size and numbers of MFOs will maximize social welfare.

Donors still need to impute an opportunity cost so they can measure how much funds they have entrusted to an MFO. This is because subsidies make subsidized resources. The opportunity cost from the point of view of donors is the return that the poor could have had if the resources were used in their best other use. A good proxy is the opportunity cost of society.

Donors care about the performance of an MFO both from birth on and from now on. Past performance matters because past subsidies make subsidized resources that still have an opportunity cost now. Donors expect more from MFOs which got more in the past. Present and future performance matter because donors want the biggest bang for the bucks they disburse now.

Commercial leverage is sufficient only for repeated use from the point of view of clients (Figure 3). An MFO that could not keep its customers could not pay for market funds and so would not attract any. Also, an MFO that was too risky for investors would be too risky to safeguard deposits from the poor. Commercial leverage does not necessarily imply anything about performance from any other point of view.

Donors do not get the benefits nor do they bear the costs of their decisions. If there is any feedback, it is often misdirected or deflected (Adams, 1988). No one has an incentive to be a gadfly or a whistleblower. Measuring commercial leverage is a way to goad donors to do good.

Performance from the point of view of managers

Managers coordinate the resources entrusted to the MFO by owners. The managers of an MFO care about performance not only because they care about the poor but also because they care about their own jobs (Figure 2). The managers of an MFO often enjoy unusually high pay and the perk of warm feelings from helping the poor. Low-income countries have few jobs so good. If the MFO shrinks and dies when donors withdraw, then managers will lose their good jobs and the chance to help the poor. Thus, managers ask the question of how far the MFO is from being able to survive withdrawal by donors.

When donors leave, they do not take anything with them except debt. Managers must maintain the real value of the subsidized resources left behind by donors in order to maintain the real size of the MFO and to keep their jobs. In addition, managers must replace any debt from donors with debt from the market. From the point of view of managers, the opportunity cost of subsidized resources is the inflation rate. The opportunity cost of debt from donors is the market price of debt, the return a private lender could get from lending of like risk.

The opportunity cost of debt from donors differs from the points of view of society and of managers. For example, a weak MFO may need to pay an interest rate of 50 percent per year to get debt from a private lender. The opportunity cost to society is probably much less than that because society's resources probably could not earn that much in their best alternative use.

The inflation-rate figure should be an average inflation rate over the period. The analyst must pick a good proxy for the market price of debt. Yaron (1992b) suggests the rate the MFO

pays for deposits, plus a few percentage points for extra administrative expenses. This might be appropriate for some large public development banks that take deposits and that have the implicit guarantee of the government, but it is too low for most MFOs. These MFOs either do not take deposits at all or could not attract more deposits without big adjustments. In these cases, a good proxy is the local prime rate, adjusted for the risk of the MFO as suggested by Yaron (1992b) and done by Benjamin (1994). The opportunity cost should be what the MFO would pay for debt from the market if it lost debt from donors.

The managers of an MFO do not care about costs sunk in the past. They care only about performance from now on. Managers will keep their jobs as long as the MFO can maintain the real value of its trapped subsidized resources while paying market rates to replace debt from donors. The MFO can survive as a going concern without paying society for all of its costs.

There are five levels of performance from the point of view of the managers of the MFO. This typology contrasts with the typologies of Christen (1997), Khandker *et al.* (1996), Christen *et al.* (1995), Inter-American Development Bank (1994) and Yaron (1992a). Each step in the typology is necessary, but not sufficient, for the next step (Figure 3).

Accounting profitability is the lowest level of performance from the point of view of managers. It means that the MFO reported a positive net income before taxes. The MFO met its obligations and maintained the nominal value of its accounting equity.

The performance of most MFOs is so bad that accounting profitability, when it has been reached, has been loudly trumpeted. But accounting profitability does not comfort managers. The bumbling, non-standard accounting of most MFOs renders accounting profitability misleading or meaningless (Yaron 1992b). This is because accounting profitability includes some grants accounted for as revenue and excludes expenses covered by discounts. It also ignores taxes on

profits.

Without donors, profits would be lower. There would be no grants, and the MFO would have to pay all of its expenses itself. Even with donors, the MFO might have to pay taxes on net profits. Accounting profitability also ignores the cost of maintaining the real value of subsidized resources against inflation and the risk premium the MFO would have to pay to replace debt from donors with debt from the market.

An MFO without accounting profitability is dying. In spite of help from donors, it is shrinking, even in nominal terms. An MFO with accounting profitability is living, but it might start shrinking if donors left. In real terms, it might already be shrinking. MFOs should not brag of accounting profitability.

Operational profitability is the second level of performance from the point of view of managers. An MFO is operationally profitable if true profits are positive. *True profits* are accounting profits less taxes, grants accounted for as revenue, discounts on debt, and discounts on operating expenses. An operationally profitable MFO could have met its obligations and maintained its size in nominal terms even if donors had stopped non-repeatable transfers and even if the MFO paid dividends or increased retained earnings from profits. But an operationally profitable MFO might still shrink in real terms. Operational profitability implies accounting profitability.

Financial profitability is the third level of performance from the point of view of managers. An MFO is financially profitable if true profits are so big that they would still be positive even if the MFO compensated for the effects of inflation on its subsidized resources. A financially profitable MFO without any debt from donors could have met its obligations without shrinking in real terms even if donors had left. But a financially profitable MFO with debt from

donors might shrink in real terms without donors. Financial profitability implies operational profitability.

Financial self-sufficiency is the fourth level of performance from the point of view of managers. An MFO is financially self-sufficient if true profits are so big that they would still be positive even if the MFO had to maintain the real value of its subsidized resources while paying for debt from the market to replace debt from donors. The price of debt from the market is set both to maintain its value against inflation and to compensate for the risk of lending to the MFO. A financially self-sufficient MFO could have met its obligations and without shrinking even if donors had left. Financial self-sufficiency makes managers comfortable because it is sufficient for managers to keep their jobs after donors leave. Managers have no selfish reason to aim higher. Financial self-sufficiency implies financial profitability.

Financial self-sufficiency matters from all points of view even though it is not sufficient for good performance from the point of view of society or of investors. But an MFO without financial self-sufficiency slips quickly into a downward spiral that destroys performance by any measure from any point of view.

Financial self-sufficiency is the top level of performance in the frameworks that use the rate of inflation as the opportunity cost of subsidized resources (*e.g.*, Holtmann and Mommartz, 1996; Christen *et al.*, 1995; SEEP, 1995; Inter-American Development Bank, 1994).

Private profitability is the fifth and top level of performance from the point of view of managers. An MFO is privately profitable if true profits are so high that the MFO could have replaced all of its subsidized resources with market resources and still met its obligations without shrinking in real terms. Private profitability implies financial self-sufficiency.

The framework of the traditional SDI (Yaron, 1992a) measures private profitability from

now on if the opportunity costs are chosen as in Benjamin (1994). The modified measure of subsidy in the long run (Schreiner, 1997a) measures private profitability from birth on. The modified measure of subsidy differs from the measure of subsidy in the framework of the traditional SDI in that it does not omit capitalized subsidies and in that it recognizes the fact that negative profits are not negative subsidized equity.

Given that the definition of true profits above and denoting the opportunity costs of equity and debt as m_{et} and m_{dt} , the modified measure of subsidy in the long run is:

$$S_t^{ML} = [2/(2-m_{et})] \cdot \{ m_{et} \cdot \text{Max}(0, \sum_{i=1}^{t-1} \text{True profits}_i) + m_{et} \cdot \sum_{i=1}^{t-1} (S_i^{ML} + \text{Grants as rev.}_i + \text{Grants as equity}_i + \text{Disc. debt}_i + \text{Disc. other op.}_i) + (m_{et}/2) \cdot [\text{Max}(0, \text{True profits}_t) + \text{Grants as rev.}_t + \text{Grants as equity}_t + \text{Disc. debt}_t + \text{Disc. other op.}_t] \}. \quad (2)$$

The modified measure of subsidy in the short run S_t^{MS} removes S_i^{ML} from (2). S_t^{MS} also replaces the first Maximum function with the summation that is its second argument in (2). S_t^{MS} would be the measure of subsidy in the framework of the traditional SDI if it further replaced the second Maximum function with simply *True Profits*.

Like the subsidy in the framework of the traditional SDI, S_t^{ML} is a lower bound. But it is a higher lower bound. Schreiner (1997a) derives (2) and also gives the adjustments for the cases with private owners and/or dividends.

The concept of *subsidy* is not the same as the concept of *compensated subsidy*. *Subsidy* is the difference between the opportunity cost and what the MFO pays. Subsidy cannot be negative by definition. In contrast, *compensated subsidy* is subsidy less true profits. Compensated subsidy could be negative if true profits are more than subsidy. Negative compensated subsidy in the short run would imply private profitability from now on. Negative compensated subsidy in the long run

would imply private profitability from birth on.

Compensated subsidy is what the MFO could pay or would need to be paid to keep the same level of service and have a true profit of zero without help from subsidies. Compensated subsidy is often confused either with social costs or with total costs. But social costs are just subsidy, and total costs are total expenses plus subsidy. Compensated subsidy is subsidy less true profits, so it is smaller than either social cost or total cost.

Compensated subsidy is a counterfactual concept; most MFOs do not pay society back for its subsidies. The traditional SDI is the ratio of compensated subsidy in that framework over revenue from lending (Yaron, 1992a). It tells the percentage increase in the average on-lending interest rate needed to make compensated subsidy zero:

$$\begin{aligned} SDI_t^T &= \frac{\text{Compensated subsidy}_t^T}{\text{Rev. from lending}_t}, \\ &= \frac{\text{Subsidy}_t^T - \text{True profits}_t}{\text{Rev. from lending}_t}. \end{aligned} \tag{3}$$

Financial self-sufficiency is a low hurdle because subsidized resources usually overwhelm debt from donors. The opportunity cost of subsidized resources from the point of view of managers is only the rate of inflation. The opportunity cost of debt from donors is higher due to its premium for risk. But because there are usually far more subsidized resources than debt from donors, the average opportunity cost for all subsidized resources from the point of view of managers will not be much higher than the rate of inflation.

Private profitability is a high hurdle because it supposes the MFO would replace subsidized resources with equity from investors. Equity is riskier than debt and so the opportunity cost of equity is even higher than the opportunity cost of debt. This means the average opportunity cost for all subsidized resources will be much higher than the rate of inflation.

Financial self-sufficiency from the point of view of managers implies commercial leverage from the point of view of donors and repeated use from the point of view of clients (Figure 3). But financial self-sufficiency does not imply worthwhileness from the point of view of society. From the point of view of society, the opportunity cost of all subsidized resources is the rate of inflation plus some premium. This opportunity cost is probably higher than the average opportunity cost used to measure financial self-sufficiency, a measure not much higher than the rate of inflation. Financial self-sufficiency will not imply social worthwhileness if the opportunity cost of society is higher than the average opportunity cost of managers.

In contrast, private profitability is sufficient for an MFO to be worthwhile from the point of view of society. The problem is that managers have no selfish reason to push past financial self-sufficiency to private profitability. They must be prodded to do better. One way government and donors can do that on the behalf of society is to measure performance and to threaten to leave even before the MFO is financially self-sufficient if it is not acting in a way that should lead to private profitability.

Performance from the point of view of investors

Investors are private people with money to invest. Investors have more money than donors, so they could fund a lot of microfinance. But investors do not care about the poor or about society. They only care about profit (Figure 2). For investors, the poor are not a mission but an untapped niche. Investors ask the question of whether investing in an MFO will make them richer.

Investors expect a return on the funds they entrust to an MFO at least as big as the returns on investments of like risk. Investors expect dividends and/or increased retained earnings. Investors know that they may not get a return bigger than their opportunity cost in each period.

When that happens, they count the shortfall as an extra investment with the same opportunity cost as the rest of their investment. In the long run, investors expect to earn at least their opportunity cost on all the resources they let the MFO use.

Donors, even if they own shares, are not the same as private owners. Unlike private owners, donors are not gambling with their own money. Often donors do not judge performance by objective criteria, and their allocations can be easily swayed by things with nothing to do with maximizing social welfare. Private owners would focus only on dividends and retained earnings. Donors do not want dividends, nor do they plan to sell their shares for a gain. If a donor demands good performance, it is to help society, not to help the donor. It is more likely that an investor will be selfish than that a donor will be selfless.

Private profitability from the point of view of the managers of an MFO is sufficient to attract investors (Figure 3). Private profitability can be seen either from birth on or from now on. Private profitability from now on from the point of view of managers is sufficient for investors to want to buy into the MFO now, regardless of whether it would have been a bad investment earlier.

Private profitability from birth on means that the MFO could have paid for equity from investors instead of ever getting any subsidized resources. Private profitability from birth also means the MFO, if liquidated, could give back all the resources entrusted to it. If an MFO has been privately profitable from birth, investors would not only want to buy into it, they would want to start like MFOs from scratch. This is the vision of Nirvana spread by Rosenberg (1994).

Private profitability from now on from the point of view of managers MFO is sufficient, but not necessary, for an MFO to be worthwhile from now on from the point of view of society. Private profitability from now on ignores capitalized subsidies and it looks only at current

accounting equity, so private profitability from now on is not sufficient for worthwhileness from birth on from the point of view of society.

Private profitability from birth on is sufficient, but not necessary, for an MFO to have been worthwhile from birth on from the point of view of society. This is true because private profitability from birth on means the MFO could have been funded completely privately, and the opportunity cost of investors is higher than the opportunity cost of society.

Relations among measures of performance from different points of view

Figure 3 shows the relations among the measures of performance from different points of view. When there is an arrow, the starting level of performance from one point of view implies the ending level of performance, perhaps from another point of view. An important example is private profitability from birth on from the point of view of the investor. This level of performance implies reaching all the others except the sustainability measures. In Figure 3, a path can be traced from private profitability from birth on from the point of view of an investor to any other level of performance except the sustainability measures from any other point of view.

The lack of arrows pointing both ways between any two levels of performance means that the MFO could reach one level without reaching the other. For example, from the point of view of society, an MFO could be worthwhile from now on without having been worthwhile from birth on. In the same way, an MFO could be worthwhile from now on from the point of view of society without being privately profitable from now on from the point of view of investors.

Another important point shown in Figure 3 is that an MFO could be worthwhile from the point of view of society from birth on and/or from now on without reaching any other level of performance except repeated use from the point of view of customers. But to make sure that an MFO is worthwhile from the point of view of society, the MFO must be privately profitable.

A particular problem from the point of view of society is that financial self-sufficiency from the point of view of managers is not sufficient for an MFO to be worthwhile from the point of view of society. Few MFOs are privately profitable from now on. Even fewer, if any at all, have been privately profitable from birth on. Without private profitability, society cannot be sure that an MFO is worthwhile, but managers do not have any selfish incentive to strive for private profitability once the MFO is financially self-sufficient.

Society needs to know if microfinance is worthwhile because society spends a lot on microfinance. For example, the Global Microcredit Summit in Washington D.C. in Feb. 1997 sought a budget of \$21.6 billion to support the goal of taking microfinance to 100 million of the world's poorest people by 2005 (*The Economist*, 1997). The bill H.R. 1129 of March 19, 1997 in the United States Congress would earmark \$170 million in 1998 and \$180 million in 1999 for microfinance in low-income countries (*New York Times*, 1997). Microfinance is even touted as a way to help people on welfare in the U.S. get themselves a job (*Wall Street Journal*, 1997). But without private profitability, only benefit-cost analysis can answer society's question of whether subsidizing MFOs is worthwhile. Benefit-cost analysis is so costly that pseudo-benefit-cost analysis, informed by human judgement, probably is better.

Two of the best MFOs in the world are the Grameen Bank of Bangladesh and BancoSol of Bolivia (Hashemi, 1997; Khandker, 1996; González-Vega *et al.*, 1997a; Christen *et al.*, 1995). Both banks are financially self-sufficient, but neither are privately profitable. Pseudo-benefit-cost analyses in Schreiner (1997a) and in González-Vega *et al.* (1997b) suggest that, from the point of view of society, both are worthwhile both from birth on and from now on. Still, most MFOs have not been worthwhile.

VI. Sustainability

Sustainable means repeatable. Sustainability has two facets: the sustainability of a transaction and the sustainability of an organization. Sustainable transactions are repeatable.

Sustainable organizations have the structure and incentives to repeat transactions.

The sustainability of a transaction

Subsidy is linked to the sustainability of transactions (Figure 5). Trades between private entities are repeatable and thus are sustainable. Such voluntary trades are not subsidized. The price in a voluntary trade is set not by fiat nor by law but rather by supply and demand.

By definition, voluntary trades have market prices. Each party chooses to spend its own resources. Each party pays at least some of the costs and enjoys at least some of the benefits of the choice to trade. In most cases, most of the costs and benefits of the trade are internalized by the traders. Each party can be trusted to do a secret benefit-cost analysis to see if the expected benefits are more than the expected costs. In many cases, a trade that is worthwhile from a private point of view is also worthwhile from a social point of view.

Voluntary trades between private entities are repeatable and thus sustainable because they are selfish actions. The owners of the traded resources choose to trade. The future is unknown, but most trades judged good by traders now should still be judged good by traders in the future.

Even donations are repeatable if they come from private entities. The private donor can be trusted to judge whether the benefits of the gift is more than the costs. For example, churches have always depended on private donations, but those donations have proven to be sustainable.

In contrast, trades involving non-private entities are not repeatable and thus are not sustainable. The parties choosing to trade are not the owners of the traded resources. Donors dole out resources wrenched from unwilling taxpayers. Taxes are the only trade which ignores the

benefits and costs of an individual trader. Other trades like that are stealing.

Most of the costs and benefits of trade between MFOs and donors are external to the traders. Therefore, the secret benefit-cost analysis of the traders cannot be trusted to match the benefit-cost analysis from the point of view of the users of the MFO and of the funders of donors.

Feedback makes markets work. But with MFOs and donors, the feedback loop is blocked. Trades between MFOs and donors are not repeatable and thus are not sustainable because they are not selfish actions. Donors are fickle. They stop trading with an MFO when they lose their omniscience and/or their altruism, which probably will happen long before private traders lose their selfishness.

Trades with donors are not repeatable. Such non-private trades always have below-market prices and so are always subsidized. Although private entities can be trusted to watch out for themselves, non-private entities cannot be trusted to look after everyone else. For example, gifts from churches are not gifts from private parties even though churches get gifts from private parties. Such gifts for MFOs could dry up.

Subsidy is linked to sustainability in that all trades with non-private entities such as donors are subsidized because they do not have a market price and in that trades with donors are not sustainable because they involve a non-private entity. But subsidy and sustainability are not always linked. Some subsidies repeat and some do not repeat after donors leave (Figure 1). Some non-subsidized trades are not sustainable, such as those involving churches discussed above.

The knowledge of the privateness of an MFO's partner in trade tells whether the analyst must impute a subsidy. The framework of the traditional SDI lacks this heuristic. But knowledge of privateness does not always tell whether a trade is sustainable. Knowledge of privateness helps in some cases, but it cannot do all the work for the analyst.

Four examples illustrating the application of these concepts to specific cases follow. First, borrowers with an MFO often hold compensating balances as a part of the loan contract. There is no subsidy because the deposits are part of the price of the loan, and borrowers willingly make them to get a loan. The deposits belong to the private individuals who are borrowers and so carry no subsidy even deposits elsewhere get better returns. The borrower can be trusted to judge whether the lost interest on deposits is worth getting the loan. In addition, compensating balances are probably sustainable. There is no reason to think that a borrower willing to make compensating balances now will change later. Shares bought by members of a credit union resemble compensating balances.

Second, gifts from private people or from firms owned by private people are voluntary. The givers are happy with the reward they get from giving. These gifts are not subsidized, and they are repeatable.

Third, there is no subsidy on equity owned by private entities even if the investment is not earning its opportunity cost. The owner of the resources chose to invest, and, if there has not been divestment, the expected benefits must be more than the expected costs. Such investments are sustainable.

Fourth, gifts from non-private organizations funded by private people. Such gifts are not subsidized, but they may or may not be sustainable. The analyst must judge. For example, churches are funded privately, and some churches fund MFOs. But, earmarked collections notwithstanding, the people funding the church do not directly chose to fund the MFO. That choice is made by people in the church organization. Like donors, church leaders do not allocate their own funds and so may suffer from conflicting incentives.

The sustainability of an organization

Sustainable organizations have a structure and a set of incentives that let them keep making sustainable trades. Sustainable MFOs help the poor now without hurting their ability to help the poor in the future. Unlike the other concepts of performance that were based in the past and the present, the concept of sustainability is based in the future.

Sustainable organizations are permanent because their operations are repeatable. They can meet their current obligations without shrinking in real terms.

Sustainable is not the same as *subsidy independent*. For example, a privately profitable MFO might be subsidy independent under the framework of the traditional SDI without being sustainable. If subsidy independence implied sustainability, then no private firm would go bankrupt.

A *self-sustainable* organization is sustainable without non-private help. *Sustainability* does not imply *self-sustainability*. For example, an MFO that is financially self-sufficient from the point of view of managers might be sustainable, but it is not self-sustainable unless it is also privately profitable from the point of view of investors (Figure 3).

An MFO is alive now and not shrinking in real terms if it is at least financially self-sufficient from the point of view of managers. But just as one year of marriage does not guarantee happily ever after, good performance now does not guarantee good performance in the future. Keeping good performance over time requires that the rules of the organization motivate managers to adapt and to adjust the rules themselves (Chaves and González-Vega, 1996).

Sustainability needs *meta-rules*—rules for changing rules (Schreiner, 1995). Good meta-rules let an organization perform well over time without extraordinary labor, luck, or leaders. The market changes with time, so the MFO cannot expect to do well if it always does the same thing.

Sustainability and mission

An MFO might win sustainability but lose its mission to help the poor. For example, an MFO might increase profits and thus financial self-sufficiency or private profitability by switching from small loans to poor people to big loans to rich people. After all, many commercial banks are sustainable and even self-sustainable. But most commercial banks are not used by the poor.

Microfinance sustainability means an MFO is sustainable and keeps its mission for the poor. *Microfinance self-sustainability* means an MFO is microfinance sustainable without help from donors. Microfinance self-sustainability implies an MFO is worthwhile from now on from the point of view of society, but microfinance sustainability does not necessarily imply anything about performance from the point of view of society (Figure 3).

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Figure 1: Typology of subsidized resources

Form	Explicit or implicit	Repeatable or non-repeatable
1. Grants accounted for as equity 2. Grants accounted for as revenue 3. Discounts on operating expenses	Explicit	Non-repeatable
4. Discounts on debt from donors 5. Capitalized subsidies 6. Positive profits	Implicit	

Table 2: Characterizing the point of view of those with a stake in an MFO

	1. Goal to maximize	2. Question	3. Opp. cost	4. Point of view in time		5. Measure
				From birth on	From now on	
1. Clients	Own benefits less costs	Would I be better off using the MFO than not?	N/A	No	Yes	Repeated use
2. Society	Benefits of poor in LDCs less costs of rich in HICs	Would society be better off funding the MFO than not?	Return to society in best other use	Yes	Yes	Social benefits less social costs
3. Donors	Dev. fin. for poor	How much dev. fin. is sparked by donor resources?	Return to poor in best other use	Yes	Yes	Commercial leverage
4. Managers	Own utility	Could the MFO live without more donor resources?	Cost to MFO of inflation or in market	No	Yes	Financial self-sufficiency
5. Investors	Own utility	Would I be better off investing in the MFO than not?	Return to investor in investment of like risk	Yes	Yes	Private profitability

Figure 3: Relations among measures of performance

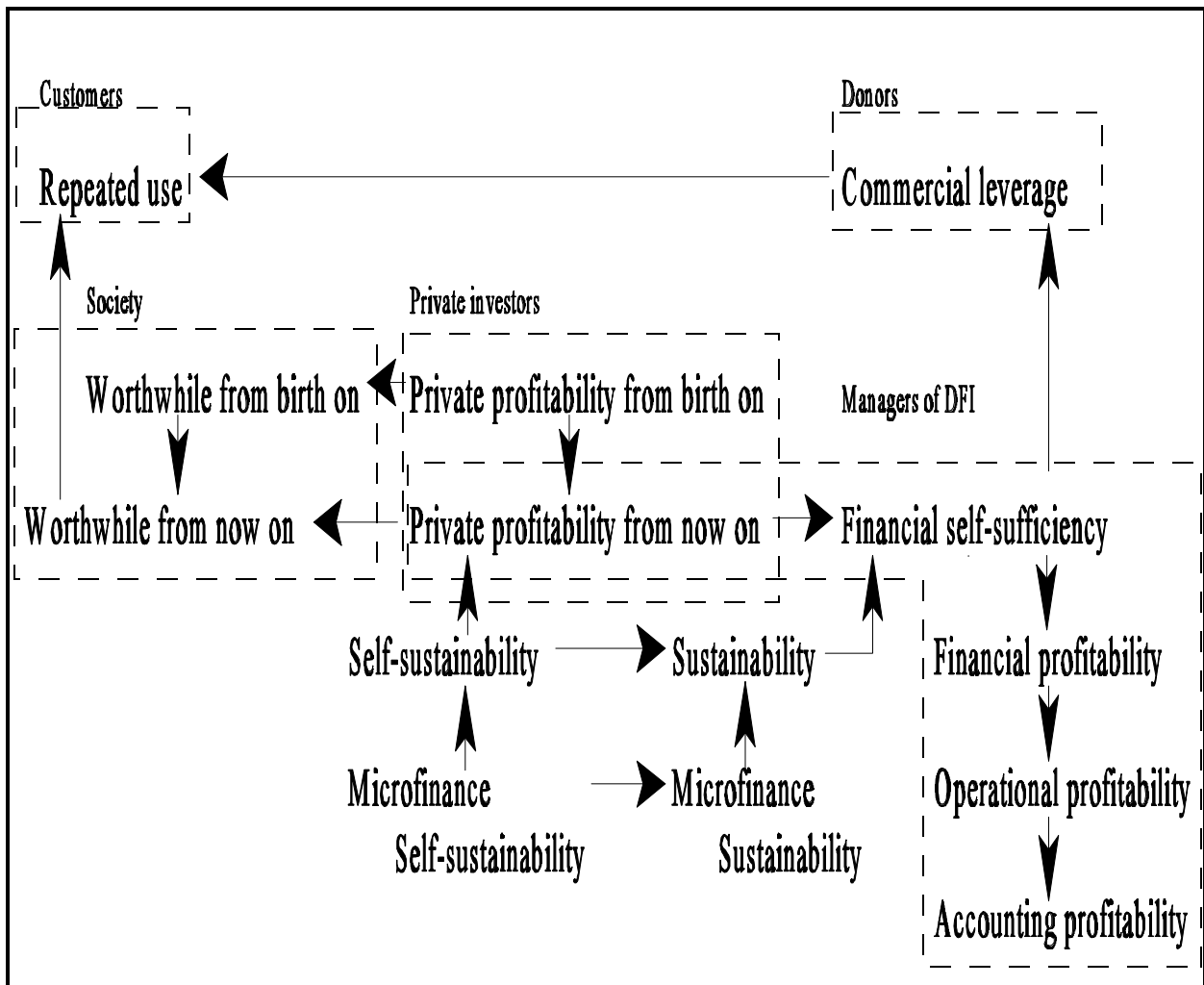


Figure 4: Average surplus in a supply and demand diagram

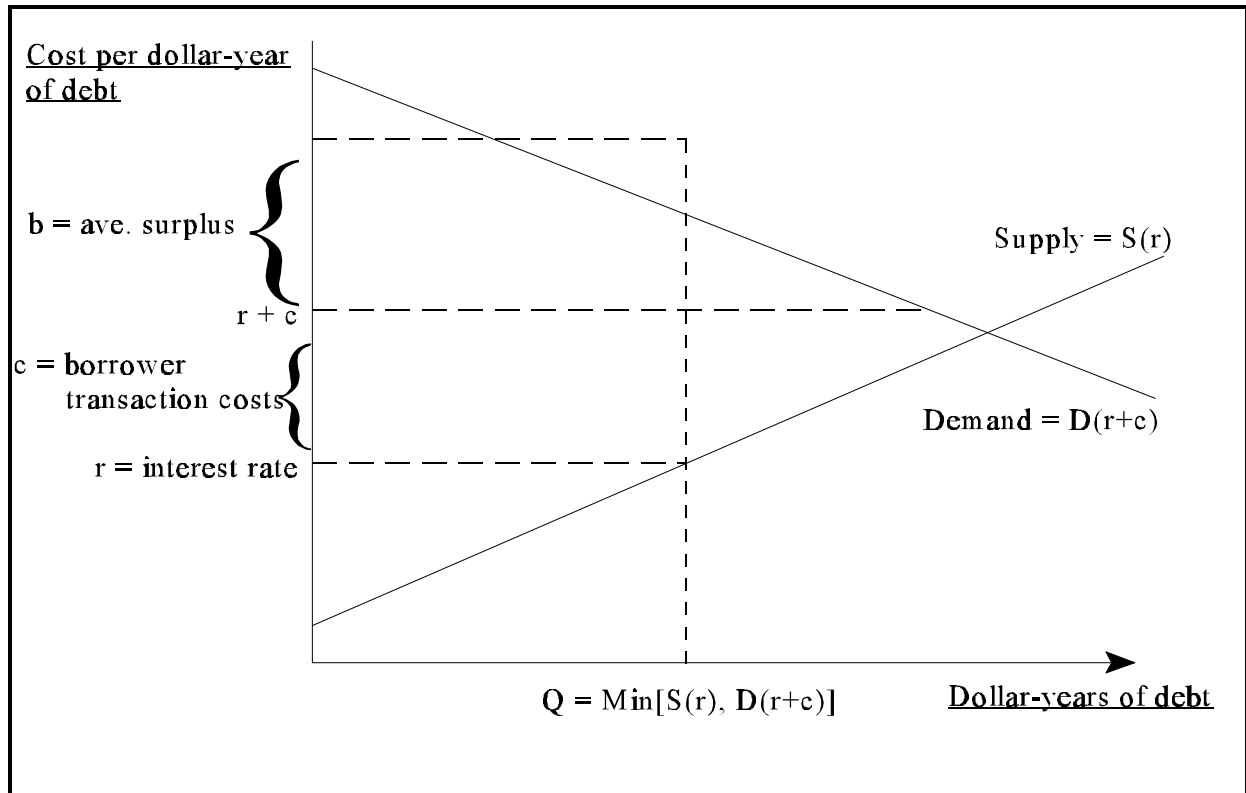


Figure 5: Relations among types of trades and sustainability

Private/voluntary	Non-private/involuntary/subsidized
<p data-bbox="240 552 586 590">Sustainable/repeatable</p> <div data-bbox="282 632 597 716" style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <p data-bbox="289 653 532 690">Self-sustainable</p> </div> <p data-bbox="277 821 542 858">(Some private gifts)</p>	<p data-bbox="678 783 1284 852">(Implicit funds from donors and explicit funds from donors in the past)</p>
<p data-bbox="277 884 542 921">(Some private gifts)</p>	<p data-bbox="678 884 1057 921">(Explicit funds from donors)</p>