

Core Performance Indicators for Microfinance¹

Experience has shown that funding agencies' microfinance interventions produce better results when design, reporting, and monitoring focus explicitly on key measures of performance. Unfortunately, many projects fail to include such measurement. This note, written for staff who design or monitor projects that fund microfinance institutions (MFIs), offers basic tools to measure performance of microfinance institutions (MFIs) in five core areas:

1. Outreach—how many clients are being served?
2. Client poverty level—how poor are the clients?
3. Collection performance—how well is the MFI collecting its loans?
4. Financial sustainability—is the MFI profitable enough to maintain and expand its services without continued injections of subsidized donor funds?
5. Efficiency—how well does the MFI control its administrative costs?

(Attachment A deals with indicators for community-managed revolving funds and other forms of microcredit that do not pass through a formal MFI.)

The indicators suggested here do not capture all relevant aspects of MFI performance. Some funders, and certainly all MFI managers, will want to monitor a longer list of indicators. And there are important dimensions, such as governance quality, that simply cannot be quantified. The five performance areas discussed here represent a minimum that should be

- treated in all project designs (reporting past performance of institutions that are expected to participate, and insuring that systems are in place to measure these indicators during the project)
- monitored and reported during implementation.
- included in all other appraisals or evaluations of existing institutions.

This list has been kept short, and the treatment of indicators as basic as possible, in order to make this note useful for non-specialists. Attachment B suggests references—all of them available on the internet—for readers who want more detail.

¹ There is no single authoritative definition of “microfinance.” For purposes of this note, “microfinance” refers to any project or component thereof that supports delivery of (1) very small, uncollateralized or less-than-normally-collateralized loans, or (2) other financial services, such as savings or insurance, for low-income clients. For reporting purposes, CGAP, the consortium of microfinance donors, counts loans as microfinance if their *average outstanding balance*—see section 2 below—is not above US\$5000 for Eastern Europe and NIS; \$2000 for Latin America and the Caribbean; \$1500 for the Middle East, North Africa, global and other projects; and \$1,000 for Sub-Saharan Africa, Asia, and the Pacific. For savings services, an appropriate cut-off might be one third or one quarter of the loan amounts.

1. Outreach

Indicator. The best measurement of outreach is straightforward:

*The number of clients or accounts
that are active at a given point in time*

This indicator is more useful than the cumulative number of loans made or of clients served during a period. Among other distortions, cumulative numbers make an MFI offering short-term loans look better than one providing longer-term loans. The recommended measure counts active clients rather than “members” in order to reflect actual service delivery: members may be inactive for long periods of time, especially in financial cooperatives.

Interpretation. Expanding the number of clients being served is an ultimate goal of almost all microfinance interventions. But rapid expansion sometimes proves to be unsustainable, especially during an MFI’s early years when it needs to design its products and build its systems. It has very seldom been useful for funders to pressure MFIs for rapid expansion.

2. Client poverty level

Indicator. Many, though not all, microfinance projects are expected to reach poor clients. There are various techniques for measuring client poverty levels, some quite expensive and others simpler, but as yet there is no widespread agreement on any one of them. If the project does not use a more sophisticated indicator, it should at a minimum report the following rough proxy for the poverty level of loan or savings clients at a point in time:

$$\text{Avg. Outstanding Balance} = \frac{\text{Gross amount of loans or savings outstanding}}{\text{Number of active clients or accounts}}$$

This point-of-time number should not be confused with total amounts loaned or deposited during the reporting period, or with the average initial amount of loans in the portfolio. The Average Outstanding Balance includes only loan amounts that clients have not yet repaid, or savings that the clients have not withdrawn. For comparison purposes, it is useful to express this indicator as a percentage of the host country’s per capita GDP (atlas method). An average outstanding loan balance below 20% of per capita GDP or \$US 150 is regarded by some as a rough indication that clients are very poor.

Interpretation. Average Outstanding Balance is roughly related to client poverty, because better-off clients tend to be uninterested in smaller loans. But the correlation between loan balances and poverty is very far from precise. Low loan sizes do not guarantee a poor clientele. Likewise, growth in average loan size does not necessarily mean that a MFI is suffering “mission drift.” As an MFI matures and growth slows, a lower percentage of its clients are first-time borrowers, and average loan sizes will rise even if there has been no shift in the market it is serving.

Funders who want to reach *very* poor clients should usually look for MFIs that are already committed to a low-end clientele, rather than trying to encourage higher-end MFIs to change their

market. Most MFIs that focus on the very poor use formal tools to screen potential clients by income level.

3. Collection performance

Reporting of loan collection is a minefield. Some indicators camouflage rather than clarify the true situation. Moreover, terminology and calculation methods are not always consistent. *Therefore, whenever any measure of loan repayment, delinquency, default, or loss is reported, the numerator and denominator of the ratio should be explained precisely.*²

MFIs' self-reported collection performance often understates the extent of problems, usually because of information system weaknesses rather than intent to deceive. Collection reporting should be regarded as reliable only if it is verified by a competent independent party.

Indicators. The standard international measure of portfolio quality in banking is **Portfolio at Risk (PAR)** beyond a specified number of days:

$$PAR(x \text{ days}) = \frac{\text{Outstanding principal balance of all loans past due more than } x \text{ days}}{\text{Outstanding principal balance of all loans}}$$

The number of days (x) used for this measurement varies. In microfinance, 30 days is a common breakpoint. If the repayment schedule is other than monthly, then one repayment period (week, fortnight, quarter) could be used as an alternative.

Many young or unsophisticated MFIs don't yet have loan tracking systems strong enough to produce a PAR figure. Most of these, however, should be able to calculate **Loans at Risk (LAR)**, a simpler indicator that counts the number of loans instead of their amounts. As long as repayment is roughly the same for large loans and small loans, LAR will not differ much from PAR.

$$LAR(x \text{ days}) = \frac{\text{number of loans more than } x \text{ days late}}{\text{total number of outstanding loans}}$$

When an MFI "writes off" a loan, that loan disappears from the MFI's books and therefore from the PAR or LAR. Thus, it's useful when reporting these measures to include a description of the MFI's write-off policy. (For instance, "the MFI doesn't write off loans," or "the MFI writes off loan amounts that remain unpaid more than 6 months after the final loan payment was originally due.")

² For a list of issues that need to be clarified when interpreting measures of collection, see [CGAP Financial Disclosure Guidelines, no ____]

An alternative measure, the *Current Recovery Rate (CRR)*, can be computed by most MFIs, and gives a good picture of repayment performance—but only if it is interpreted very carefully.

$$CRR = \frac{\text{cash collected during the period from borrowers}}{\text{cash falling due for the first time during the period under the terms of the original loan contract}}$$

This ratio can be calculated using principal payments only, or principal plus interest.

CRR and variants of it are often misunderstood. It is tempting, but badly mistaken, to think of the CRR as a complement of an annual loan loss rate. For instance, if the MFI reports a 95% collection rate, one might assume that its annual loan losses are 5% of its portfolio. In fact, if an MFI making 3-month loans with weekly payments has a 95% collection rate, it will lose well over a third of its portfolio every year.³ Thus, the CRR indicator should never be used without translating it into an *Annual Loan-loss Rate (ALR)*. Here is a simplified formula:

$$ALR = \frac{1 - CRR}{T} \times 2$$

where *T* is average loan term expressed in years

Variations in late payments and prepayments cause the Current Recovery Rate to jump around over short periods, often registering above 100 percent. Thus, it must be applied to a period long enough to smooth out random or seasonal variations—typically a year.

Interpretation. Repayment of an MFI's loans is a crucial indicator of performance. Poor collection of microloans is almost always traceable to management and systems weaknesses. The strongest repayment incentive for uncollateralized microloans is not probably not peer pressure, but rather the client's desire to preserve her future access to a loan service she finds very useful to her and her family: thus, healthy repayment rates are a strong signal that the loans are of real value to the clients. Finally, high delinquency makes financial sustainability impossible. As a rough rule of thumb when dealing with uncollateralized loans, Portfolio or Loans at Risk (30 days or one payment period) above 10%, or Annual Loan-Loss Rates above 5%, must be reduced quickly or they will spin out of control.

4. Financial Sustainability (Profitability)

Indicators. In banks and other commercial institutions, the commonest measures of profitability are *Return on Equity (ROE)*, which measures the returns produced for the owners, and *Return on Assets (ROA)*, which reflects that organization's ability to use its assets productively.

³ See the CGAP paper on delinquency measurement cited at the end of this Note for an explanation of this surprising result, and for calculation refinements.

$$ROE = \frac{\text{After-tax profits}}{\text{Starting (or period-average) equity}}^4$$

$$ROA = \frac{\text{After-tax profits}}{\text{Starting (or period-average) assets}}$$

These are appropriate indicators for unsubsidized institutions. But donor interventions more typically deal with institutions that receive substantial subsidies, most often in the form of grants or loans at below-market interest rates. In such cases, the critical question is whether the institution will be able to maintain itself and grow when continuing subsidies are no longer available. To determine this, normal financial information must be “adjusted” to reflect the impact of the present subsidies. Three subsidy-adjusted indicators are in common use: Financial Self-sufficiency (FSS), Adjusted Return on Assets (AROA), and the Subsidy Dependence Index (SDI). These measures are more complex than the indicators discussed previously, and there are slight variations in the ways of calculating each of them, so use of the references cited in Attachment B is encouraged.

FSS and AROA use similar adjustments.

An *Inflation Adjustment (IA)* reflects the loss of real value of an MFI’s net monetary assets due to inflation:

$$IA = \frac{(\text{Assets that are denominated in currency amounts}^5 \text{ minus Liabilities that are denominated in currency amounts})}{\text{times The inflation rate for the period.}}$$

This adjustment is usually based on net asset values at the beginning of the period, but using period averages may be appropriate for MFIs that receive large grants, or other infusions of equity capital, during the period.

A *subsidized-Cost-of-Funds Adjustment (CFA)* compensates for the effect of soft loans to the MFI:

$$CFA = \frac{\text{Period-average borrowings by the MFI}}{\text{times “Market” interest rate}} \text{ minus Actual amount of interest paid by the MFI during the period}$$

A common benchmark for a market interest rate is the rate that commercial banks pay on 90-day fixed deposits. Arguably a more appropriate rate is a few points above the “prime” rate that banks charge on loans to their best customers, because few MFIs could actually borrow at a lower rate.⁶

⁴ ROE calculations should use starting equity unless there has been a substantial infusion of new equity from an outside source during the reporting period.

⁵ For instance cash, investments, or loans; but not buildings or equipment

⁶ A more sophisticated benchmark would be based on the probable cost (including interest, administrative expense, and reserve requirements) of the specific form(s) of commercial funding the MFIs is likely to be raising when it moves beyond soft funding sources.

The *In-kind Subsidy Adjustment (ISA)* quantifies the benefit an MFI gets when it receives goods or services without paying a market price for them (computers or free services of a manager are common examples).

$$ISA = \text{Market price an unsubsidized MFI would pay for a good or service} \\ \textit{minus} \textit{ Actual price paid by the MFI}$$

Financial Self-Sufficiency (FSS) is a subsidy-adjusted indicator often used by donor-funded microfinance NGOs. It measures the extent to which an MFI's business revenue—mainly interest received—covers the MFI's adjusted costs. If the FSS is below 100%, then the MFI has not yet achieved financial break-even.

$$FSS = \frac{\textit{Business revenue (excluding grants)}}{\textit{Total expenses + IA + CFA + ISA}}$$

Adjusted Return on Assets measures an MFI's net profit or loss (including adjustments) in relation to the MFI's total assets.

$$AROA = \frac{\textit{Accounting profit/loss (excluding grants) - IA - CFA - ISA}}{\textit{Period-average total assets}}$$

The **Subsidy Dependence Index (SDI)** measures how much an MFI would have to increase its lending interest rate in order to cover all of its costs including adjustments.⁷ An SDI above zero means that the MFI still needs subsidy to operate—i.e., it has not achieved financial sustainability. A two-stage calculation produces first the amount of annual subsidy and then the index.

$$(1) \quad S = A(m - c) + [(E * m) - P] + K$$

where:

S = Annual subsidy received by the MFI;

A = MFI concessional borrowed funds outstanding (annual average);

m = Interest rate the RFI would be assumed to pay for borrowed funds if access to borrowed concessional funds were eliminated;

c = Weighted average annual concessional rate of interest actually paid by the RFI on its average annual concessional borrowed funds outstanding;

E = Average annual equity;

P = Reported annual before-tax profit (adjusted, when necessary, for loan loss provisions, inflation, and so on);

K = The sum of all other annual subsidies received by the RFI (such as partial or complete coverage of the RFI's operational costs by the state).

⁷ The SDI is framed in terms of increases in an MFI's interest rate on loans, but this is not meant to suggest that raising interest rates is the only path to sustainability. Cutting costs is at least as important.

$$(2) \quad \text{SDI} = \frac{S}{LP * i}$$

where:

- SDI = Index of subsidy dependence of MFI;
- S = Annual subsidy received by the MFI (see above);
- LP = Average annual outstanding loan portfolio of the MFI;
- i = Weighted average interest yield earned on the MFI's loan portfolio.

Interpretation. Some believe that, absent exceptional circumstances, donors should only support financial intermediaries that are on a credible track to financial sustainability. On the other hand, some people believe that there should be room for permanently-subsidized financial services for certain client groups. Whatever one's position on this question, it makes sense to measure intermediaries' financial sustainability, either to tell whether they're meeting a goal of the project, or else to quantify clearly the level of subsidy that is being invested for a particular result.

The fact that an MFI's sustainability indicator improves over a period of years does not necessarily mean that the MFI will reach financial sustainability. Sustainability indicators for MFIs will improve almost automatically in the early years; but the majority of MFIs never become fully sustainable, and thus can never expand beyond the limits of scarce subsidized funding.

It takes some sophistication to judge whether an MFI's sustainability is improving fast enough. Most MFIs that have become profitable have done so within 10 years of start-up. However, now that microfinance knowledge and expertise are more widely available, MFIs should usually not take more than 5 years to reach sustainability, with the possible exception of MFIs working in rural areas with very low population density.

One important factor is the pace of growth: rapid growth will temporarily depress an MFI's profitability because such growth requires new investments in staff and facilities that take a period of time to become fully productive. For MFIs that are growing fast, analysis of mature branches and loan officers can often reveal whether the institution is on a trajectory that leads to sustainability.

5. Efficiency

Indicators: The most commonly used indicator of efficiency expresses non-financial expenses as a percentage of the gross loan portfolio:

$$\text{Operating Expense Ratio} = \frac{\text{Personnel and administrative expense}}{\text{Period-average gross loan portfolio}}^8$$

⁸ "Gross" loan portfolio means the total outstanding (not yet repaid) amounts of all loans. For an MFI that provides voluntary savings, average total assets could be used as the denominator. This ratio is sometimes called "Administrative Expense Ratio" or simply "Efficiency Ratio."

The Operating Expense Ratio is the most widely used indicator of efficiency, but its substantial drawback is that it will make an MFI making small loans look worse than an MFI making large loans, even if both are efficiently managed. Thus, a preferable alternative is a ratio that is based on clients served, not amounts loaned:

$$\text{Cost per Client} = \frac{\text{Personnel and administrative expense}}{\text{Period-average number of active borrowers [x GNI per capita]}}$$

If one wishes to benchmark an MFI's Cost per Client against similar MFIs in other countries, the ratio should be expressed as a percentage of per capita Gross National Income (which is used as a rough proxy for local labor costs).

Interpretation. Measured in terms of costs as a percentage of amounts on loan, tiny loans are more expensive to make than large loans. Only a few extremely efficient MFIs have an Operating Expense Ratio (OER) below 10 percent; commercial banks making larger loans usually have OERs well below 5 percent. The average OER of MFIs reporting to *The MicroBanking Bulletin*⁹ is about 30 percent, which probably reflects considerable inefficiency.

As mentioned earlier, the OER tilts the scales against MFIs making smaller loans: six \$50 loans cost more to make than one \$300 loan. Measured this way, an MFI can become more "efficient" by simply dropping its smaller borrowers, even without making any improvements in operating systems. Cost per Client avoids this perverse result.

When a microfinance market starts to mature and MFIs have to compete for clients, price competition on interest rates will usually push the MFIs to get more efficient. But many MFIs face little real competition. External monitoring of efficiency is especially important in those cases.

Young or fast-growing MFIs will look less efficient by either of these measures, because those MFIs are paying for staff, infrastructure, and overhead that are not yet fully used.

⁹ Issue No. 9, July 2003—164 MFIs reporting.

In a nutshell:

At a minimum, measure in five areas:

1. Outreach

--number of active clients or accounts

2. Client poverty level

--Average outstanding balance per client or account

3. Collection performance

--Portfolio at Risk (PAR) *or*

--Loans at Risk (LAR) *or*

--Current Recovery Rate (CRR) together with
Annual Loan-loss Rate (ALR)

4. Financial sustainability (profitability)

for commercial institutions:

--Return on Assets (ROA) *or*

--Return on Equity (ROE)

for subsidized institutions:

--Financial Self-Sufficiency (FSS) *or*

--Adjusted Return on Assets (AROA) *or*

--Subsidy Dependence Index (SDI)

5. Efficiency

--Operating Expense Ratio (OER) *or*

--Cost per Client

Attachment A: What about community-managed revolving loan funds or other non-institutional microcredit?

Some projects provide communities or other social groups with funds to finance loans to their members. When such funds are handled by the community itself rather than by a formal institution, record-keeping may be limited, so that it is often impossible to measure financial sustainability. However, the other three core performance areas can and should be tracked, especially collection performance.

Outreach. This is measured the same way for revolving funds as for MFIs: number of clients with active loans.

Client poverty level. The revolving fund records may make it hard to determine the total outstanding balance of the loan portfolio. In such cases where average outstanding balance cannot be determined, an acceptable substitute is average initial loan size, which is more easily determined. This indicator should be expressed as a percentage of per capita GDP.¹⁰

Collection performance. Measuring repayment is crucial for revolving funds, because they are so prone to repayment problems (most revolving funds don't revolve for very long). Even if the purpose of the activity is to get resources into the hands of the community rather than to set up a permanent financial facility, a revolving fund with high default is not a good vehicle for the resource transfer. The distribution of benefit is likely to be inequitable, because the defaulters appropriate most of the value of the fund. Loans that don't have to be repaid are much more likely to be captured by local elites. Furthermore, distributing loans that don't get repaid can do harm by creating a culture of non-payment that makes it difficult for responsible, sustainable lenders to serve the population involved.

For these and other reasons, no revolving funds should be set up without insuring at the very least that there is a system in place to track loan collection performance. Two of the collection measures described above—Loans at Risk and Current Collection Rate—can be maintained using simple manual systems.

If an existing revolving fund has no system for tracking collection performance, it is usually practical to compute LAR (one repayment period) manually as of the date of the measurement.

¹⁰ If loans are paid off in installments whose timing and amount are equal, the relation between average initial loan size and average outstanding balance tends to be as follows:

No. of payments in the whole loan	1	2	3	4	8	12	24 or more
Avg. o/s balance as % of average initial loan amount	100%	75%	67%	63%	56%	54%	near 50%

These percentages will be materially higher if the loan portfolio is growing fast.

A more powerful ex-post approach is to compute an Annual Loan-loss Rate (ALR) as follows. First, compute the Current Value (CV) of the loan portfolio:

$$\begin{array}{l} \text{Cash or bank deposits} \\ \textit{plus} \quad \text{Total outstanding balance (i.e. amounts not yet repaid in cash) of portfolio} \\ \textit{minus} \quad \text{Outstanding balance of all loans whose age since disbursement is more than} \\ \quad \quad \quad \underline{\text{double the original loan term}} \\ \textit{equals} \quad \text{Current Value of the fund.} \end{array}$$

Next, calculate the Annual Loss Rate (ALR):

$$ALR = 100\% - \sqrt[t]{\frac{CV}{OV}}$$

- where t = Time (in years) since the fund started lending
- CV = Current Value of the fund as computed above
- OV = Original Value of the fund (total am't disbursed to the fund)

If the project being reviewed has many revolving loan funds and it is not possible to do collection analysis on all of them, then a random sample should be selected for analysis.

Attachment B: Useful References: [Complete references will be supplied.]

General: [SEEP's new handbook of financial indicators, when it comes out.]

[cgap appraisal format] A comprehensive guide for institutional evaluation of an MFI. Because it is designed for a one-time exercise, this appraisal format collects many indicators that would not be appropriate to require in an MFI's regular reports.

[consensus definitions] A broad group of donors and practitioners produced this set of definitions in hopes of reducing the confusion and inconsistency in the use of financial indicators.

Client Poverty: [cgap pov assessment tool] A sophisticated survey tool comparing poverty levels of MFI clients and non-clients in a locality. It tends to cost around \$10,000 to implement.

[other reference(s) from Hashemi]

Collection performance: [CGAP delinquency OP] A detailed but readable discussion of how to calculate and interpret loan collection indicators

[CGAP Audit Handbook] Volume II shows how to test loan collection performance (pp. 33-62 and Annex D)

[The MicroSave portfolio testing tool, when it's published.]

Sustainability: [WB Discussion Paper 174] The original exposition of the SDI

Schreiner and Yaron, *Development Finance Institutions: Measuring Their Subsidy*. Washington DC: World Bank, 2001. A technical treatment of the SDI and another indicator that takes into account the timing of subsidies.

The three references listed above under "General" all have sections on sustainability/profitability.