BSM - FINANZWESEN

Monitoring system for savings and credit operations

- Guide and explanation of data and ratios -

LONG VERSION

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I. INTRODUCTION

This guide is part of a toolkit to monitor the evolution of savings and credit activities in a project or institution. It will help you to fill in the "Monitoring sheets in excel"[1], the actual instrument, which will allow you to compare the data from period to period, and give you explanations on the significance of the ratios.

Where do you get the information from?

You should find all the information on those three statements:

- Balance sheet,
- Profit and loss account or income statement,
- Portfolio report.

If you do not already dispose of a Management Information System (MIS), the following monitoring sheet will help you to appraise your operations and better orient strategic decisions. If you are of a certain size in terms of number of clients, you should use an adequate software for your MIS, which in the ideal case integrates client data, portfolio management and accounting.

What do you want to monitor?

The data used for the monitoring refers exclusively to those operations related to financial activities (credit and deposits). Non financial (or non banking) activities of the institution (research, consulting, training, etc.) will be mentioned in point 1.2 of the excel sheets but will not be taken into account for the calculation of the ratios.

At which moment do you take the information?

The monitoring tool should at least be completed every six months. If not stated differently, the information on situations (balance) will be dated on the 30th of June and the 31st of December of each year. The economic flows (income statement) as well as the portfolio report will cover the period of 1st January to 30th June and 1st July to 31st December, respectively (or according to your financial year). Nevertheless, if your accounting system does not allow you to obtain the information at the moments and for the time ranges suggested above, it is very important that you indicate the exact time range of the data (*reported period* and *previous period*).

In what currency do you present the information?

The data reported on the monitoring sheet will be stated in the same currency as your financial statements. Do not forget to correctly indicate the exchange rate, inflation rate and rate of devaluation in section 2 of the excel sheets. If your institution elaborates the financial statements in dollars, the present information can also be presented in dollars. You should always be careful not to forget to state the currency and stick to it all over the monitoring sheet.

What kind of information do you need?

The information needed in order to calculate the different ratios is provided either by the balance sheet, the income statement or the portfolio report or, eventually, by general information on the institution. The glossary of definitions for the variables used to calculate the ratios are available in section III of this guide.

[1] We provide a long version and a short version of the excel monitoring instrument. The latter can be used by institutions which are relatively young and do not have the full financial data to fill in the long version.

A variable can be either a stock, a flow or an average. If it is a stock, it will be found on the balance sheet and will be dated at the last day of the last month of the period evaluated (30th June or 31st December). If it is a flow it will be found on the profit or loss account (income statement) and will cover the period evaluated (six months if not stated differently). Finally, some variables must be calculated as averages of stocks. The computation of these averages will depend on the frequency at which the institution produces financial statements. In all cases, the average value used for a term will be the best average that can be calculated using the available data over a given period. If these are available every month, the average will be a sum of the value at the end of each month divided by the number of months. If, on the other side, information is only available every six months, the average will be the sum of values at the end of the present period and at the end of the previous period, divided by two.

While you fill in the data, you have to keep in mind the time range under consideration, and stick to it until the end. Otherwise it will be impossible to calculate ratios and compare them over time.

What to do with missing data?

You should use the following expressions instead of leaving blank cells:

NA when the required information is Not Available.
NC when it does Not Correspond to your organisation (for example if you do not offer savings services).
"0" if the value of the number is zero.

II. CONTENT OF THE MONITORING SHEETS (IN EXCEL)

1. General presentation of the organisation

This section provides a general overview of your institution or project, indicating who you are, how you are organized, who are your funding partners and in which environment you work.

First, do not forget to indicate the present date, the reported period, the currency used to present the figures, the exchange rate (to US$ or Euro) and the inflation rate. The range of the reported period and the currency have to be maintained during the whole report, in order to perform a correct evaluation of the data.

1.1 Visiting card (excel sheet 1)

Coordinates of your institution, responsible persons and type of organization.

1.2 Activities (excel sheet 1)

Gives a quick overview of the type of financial and non-financial services offered by your institution.

1.3 Funding sources (excel sheet 2)

In the case of **loans**, you are required to fill in both the amount outstanding at the end of the reported period and the amount disbursed when you received the loan or credit line. For the other sources of funds, only mention how much and when you received the funds.

The **equity** is the capital of the institution or its "own money". It is composed by the:
- contributed capital (donations that have been transformed into equity),
- members' or shareholders' capital,
- accumulated surplus/deficit,
- current surplus/deficit.

1.4 Capital structure (excel sheet 3)

The capital of most savings and credit institutions is complemented by long term concessional loans (generally more than three years) from private and public donors. These loans can be considered as a **quasi-equity**, as they are for long periods and are not subject to interest payments. Normally, the banking supervisory body decides about what can be considered as a quasi-equity and what cannot.

1.5 Legal and regulatory requirements (excel sheet 3)

Please mention only those legal and regulatory requirements which have to be fulfilled by **your** organisation.

1.6 Personnel (excel sheet 3)

Gives and idea on the size and composition of your staff.

2. Economic data of the country (excel sheet 3)

It is not always possible to obtain up-to-date economic data on the country. Nevertheless it is very important to try to get the most recent one and to mention the date and source of information. Current sources of information are usually the central bank or the banking supervisory authorities of each country, as well as the World Bank and IMF statistics.

3. Performance indicators

3.1 Outreach (coverage and depth) (excel sheets 4 & 5)

The indicators for the outreach of the organisation give information on the **coverage** (size of operations in terms of clients and geographical distribution) and on the **depth** or poverty orientation (to which extent the institution serves poor households and which economic sectors it reaches).

The information on outreach is crucial to understand and interpret the indicators that follow, in points 3.2 to 3.8. Any changes in the coverage or depth of the financial services will affect all performance indicators and have thus to be kept in mind when analysing the data and ratios.

For the *"distribution of disbursed portfolio by geographical regions and by economic activities"* you should use the same division as in your own statements and reports.

3.2 Portfolio quality (excel sheet 6)

Important Note: in the "Monitoring sheets in excel", the ratios are expressed in absolute terms (not percentages), including *portfolio at risk*.

The portfolio quality has a direct influence on the:

- profitability,
- liquidity,
- capital adequacy….

… of the institution and, therefore, on its:

- sustainability.

Risk management (of the portfolio and other assets) is crucial for the viability of the credit operations and for the security of clients' savings. The risk that some of the loans will not earn revenue and may not be paid back is very real and must be anticipated.

In order to be able to understand the portfolio quality indicators and compare them between various institutions, you should answer to the following questions as a complement to the presentation of the ratios:

Question 1: From when on (number of days/months) does the institution consider that a loan is in arrears? If possible, the report on the portfolio at risk should take into consideration different degrees of lateness. If the institution is supervised by the banking authorities, the ageing intervals to be used for the portfolio at risk report are usually defined. But if the institution is not subject to supervision, it should choose its ageing intervals, according to its experience.

Question 2: How are the write-off, rescheduling and refinancing policies of the institution?
When a loan has been delinquent for a long period of time, it will be either written-off, rescheduled or refinanced. Each of these actions affect the average value of loans outstanding used to calculate the ratios of the portfolio quality. Therefore, in order to understand the true significance of these ratios, it is very important to explain what the institution has done during the period evaluated with respect to writing-off, rescheduling and refinancing.

$$\text{Portfolio at risk (PAR) (one and x days)} = \frac{\text{Balance of loans with (one and x) days arrears}}{\text{Value of loans outstanding}}$$

- The portfolio at risk ratio might be pegged to any degree of lateness (one day, 30 days, 90 days, etc.). "The policy at one large donor agency is not to fund any MFI whose PAR_{90} (portfolio at risk overdue 91 days or more) is above 10 percent" (Rosenberg, 1999). Independently of what degree of lateness the institution uses, we recommend to always mention the ratio for one-day arrears.
- If a portfolio is growing rapidly, delinquency may be understated, as the portfolio (denominator) includes all loans, even those that have no yet had any payments due. Therefore, the potential risk may not be known for some time.
- Some microfinance institutions still use the arrears rate (late payments/value of loans outstanding) to measure the level of delinquency. Nevertheless, this ratio might underestimate the risk, as "late payments" do not consider the part of the loan which is still outstanding and which is also subject to delinquency risk.

$$\text{Loan loss ratio} = \frac{\text{Amount written-off}}{\text{Average amount of loans outstanding}}$$

- The amount written-off represents the total value of loans that have been determined non-recoverable and have been written-off the balance sheet during the evaluated period.
- Actual loan losses (or write-offs) are reflected on the balance sheet only (and not in the profit or loss account) as a reduction of the loan loss reserve and the gross outstanding loan balance. The resultant effect is to leave the net portfolio on the balance sheet unchanged since the reserve has already been made (and expensed).
- The loan loss ratio can be compared over time to see if loan losses, as a percentage of average outstanding portfolio, are increasing or decreasing. It can also be compared to the reserve for possible losses in order to determine whether the reserve is sufficient, based on the amount of historical loan losses.
- By adopting an aggressive write-off policy, the portfolio at risk can be kept artificially low (for example if the board of directors or the donors are more concerned about delinquency than profitability). Therefore, portfolio at risk ratios should be viewed in conjunction with the write-off policy.

Reserve ratio =	$\frac{\text{Reserve for possible losses}}{\text{Value of loans outstanding}}$

- The reserve for possible losses (loan loss reserve) is the total amount set aside to cover future losses of the loan portfolio. When the reserve is created (or adjusted), a loan loss expense (referred to as the provision for loan losses) is recorded on the income statement as an expense. The amount of loan loss expensed is then recorded on the balance sheet as a negative asset (reserve for possible losses) reducing the net outstanding loan balance.
- The amount of provisions set aside in each period to create the reserve for loan losses should be based on a historical analysis of loan losses, loan rescheduling and loan refinancing. Nevertheless, new or small institutions, which do not dispose of historical data, can apply a more elementary approach. They can either provision automatically at each loan disbursement (for example 1%) or provision every quarter of year to keep their loan loss reserve at a certain level (for example 2% per quarter of year or 10% a year). The bigger loans should be assessed and provisioned case wise.
- Savings and credit institutions which work with a very risky population segment might need to provision more aggressively (create a bigger reserve) than bank regulations or conventional accounting practice would require.
- The reserve ratio gives a quick check on the adequacy of the institution's reserve policy, especially when analysed in relation to the loan loss ratio.

Rescheduled loans	Total value and number of rescheduled loans

- The amount rescheduled corresponds to the total value of loans whose terms of payment have been extended during the period evaluated. Rescheduling happens when a debtor misses to pay one or more payments of a loan and asks the institutions for an extension of the loan term.

Refinanced loans	Total value and number of loans refinanced

- The amount refinanced corresponds to the total value of loans that have been refinanced during the evaluated period. This situation occurs when a client falls in arrears and is temporarily unable to pay the loan, so that the institution gives her/him a new loan over the old one.

3.3 Financial viability (excel sheet 7)

The indicators of financial viability refer to the ability of an MFI to cover its costs with earned revenue. To be financially viable, a savings and credit institution cannot permanently rely on donor funding to subsidise its operations.

Operational self-sufficiency =	$\frac{\text{Operational income}}{\text{Operational costs + financial costs + provision for loan losses}}$

- An operational self-sufficiency of 1 (or 100%) is the first stage that an institution should reach in its way to long term financial viability. If a savings and credit institution does not reach that, eventually its equity will be reduced by losses or must be compensated by grants.
- When the breakeven value of 1 has been reached, the focus needs to be shifted to the question of financial self-sufficiency.

$$\text{Financial self-sufficiency} = \frac{\text{Operational income}}{\text{Operational costs + financial costs + provision for loan losses + interest subsidy + in-kind subsidy adjustment}}$$

- The financial self-sufficiency ratio corresponds to the operational self-sufficiency ratio, adjusted by the interest subsidy from concessional loans and in-kind subsidies. The institution has to plan that in the long run, it may have to get all its loans at market rates and pay all the costs itself, without any external grants.
- Unless financial self-sufficiency is reached, the long term provision of financial services is undermined by the continued necessity to rely on donor funds.
- Usually, financial self-sufficiency should also cover the cost of capital: the loss in the real value of equity due to inflation. Nevertheless, on the other hand, the assets gain value through inflation, and calculating the net cost or profit from inflation can be complicated, reason why we exclude it from the ratio.[2]

$$\text{Gross financial margin (spread)} = \frac{\text{Financial income – financial costs}}{\text{Average amount of performing assets}}$$

- The spread represents the amount available to cover non financial costs of the institution.
- Subtracting the provision for loan losses from the nominator, yields the net financial margin.

3.4 Profitability (excel sheet 7)

Profitability ratios measure an institution's net income in relation to the structure of its balance sheet. They show members, investors and managers how much return are earned on the funds invested in the institution. Determining profitability is quite straightforward: does the institution earn enough revenue, excluding grants and donations, to cover its costs? For the organisation to survive in the short term, the profitability ratio should be positive, that is, the program has achieved break-even.

$$\text{Return on equity (ROE)} = \frac{\text{Net income from operations}}{\text{Average amount of equity}}$$

- The ROE ratio is an important tool for shareholders to determine how much income their investment is generating, relative to the risk involved, and how it compares with alternative investments.
- Nevertheless, this ratio should not be used to compare the overall profitability between programs, because the structure of capital (donations relative to shareholder's capital) varies considerably from case to case (Bartel et.al., 1995: no.1).
- If the ROE ratio is smaller than the inflation rate during the evaluated period, the equity of the institution is reducing itself by the difference. On average, financially self-sufficient MFIs in the world have a ROE of about 15%, while the non financially self-sufficient ones have an average ROE of 2.3%. However these numbers vary a lot between continents and type of institutions (MicroBanking Bulletin, Issue No. 9, July 2003).

$$\text{Return on assets (ROA)} = \frac{\text{Net income from operations}}{\text{Average amount of total assets}}$$

- The ROA measures the net income earned on the assets of a credit and saving institution. It differs from the ROE ratio in that it measures the return on all funds used to finance the institution (equity and liabilities), not only own funds.
- " (…) average (amount of) total assets are used rather than performing assets, because the organisation is being measured on its total financial performance, including decisions made to purchase fixed assets or invest in land and buildings (in other words, using funds that could be used for other revenue-generating investments) or invest in securities" (Ledgerwood, 1999).

[2] Those who are interested in adjusting the financial performance ratios to inflation can look at CGAP (2002a).

- Bank supervisory bodies prefer this measurement of earnings quality, rather than the return on equity, because it does not "reward" financial institutions for high leverage - those which operate with low levels of equity relative to debt - (Bartel et.al., 1995: no.1).
- On average, those MFIs which have reached financial self-sufficiency have a ROA of 5.7%, while the other ones have a ROA of 0.1% (MicroBanking Bulletin, Issue No. 9, July 2003).

$$\text{Performing to non performing assets} = \frac{\text{Average amount of performing assets}}{\text{Average amount of non-performing assets}}$$

- Too many non-performing assets relative to performing assets will reduce the earning potential of the organisation.

3.5 Productivity and efficiency (excel sheet 8)

Productivity and efficiency management involves both maximising revenue and minimising costs, relative to the volume of activities. Managers have to ensure that staff members are accountable for the institution's operations and have to give them the right incentives for productive and efficient performance. At the same time, the MIS should provide them with timely and useful management information (Ledgerwood, 1999).

The ratios below are affected by the efficiency of operations and the installed capacity. The efficiency of operations depends on the portfolio policy and structure (number of loans disbursed, number of loans serviced, average amount of loans, etc.). Each change in the policy and the organizational structure of the institution affects the operational cost, which makes the comparison of these ratios between institutions and periods difficult. The installed capacity refers to the amount of activity the organisation can undertake given its current physical and human resources. An organisation does not always function at 100 percent capacity, because the demand for its loans may be cyclical. Despite these fluctuations, the institution will need to maintain a capacity that allows handling peak demand (Bartel et.al., 1995).

$$\text{Operational costs per unit of money outstanding} = \frac{\text{Operational costs}}{\text{Average amount of loans outstanding}}$$

- This ratio indicates how much an institution spends on personnel and administration in order to manage its portfolio of credits.
- For the denominator, the average amount of loans is a better indicator than the outstanding portfolio, because it gives a more realistic view of the volume of operations throughout a whole period.
- An institution which manages a large portfolio of few big credits is favoured with respect to this ratio, compared to an institution which manages a lot of small loans. For this reason, the following ratio on operational costs per loan in portfolio has to be considered as well.

$$\text{Operational costs per loan in portfolio} = \frac{\text{Operational costs}}{\text{Average number of loans outstanding}}$$

- The operational cost per loan ratio should be analysed together with the previous ratio. This ratios gives complementary information, because an increment of the average loan size does not affect the denominator of the ratio.

$$\text{Personnel costs per unit of money outstanding} = \frac{\text{Personnel costs}}{\text{Average amount of loans outstanding}}$$

- The value can range from 0.05 to 0.35 (MBB, November 2002). It may depend on the outreach and depth of operations, on the existence or not of savings products, etc.

Number of active borrowers per credit officer =	Number of active borrowers / Number of credit officers

- This ratio indicates the productivity of the loan officers and the institution's operational efficiency.
- On average, MFIs in the world have 284 active borrowers per loan officer (MicroBanking Bulletin, Issue No. 9, July 2003). Of course, this ratio cannot be analyzed without information on the location of the MFI, the population density, the number of branches, the road infrastructure, etc.

3.6 Capital adequacy (excel sheet 8)

The capital adequacy refers to an institution's amount of equity relative to its assets. Equity serves, among others, as a source of security, stability, and flexibility. It can be used as a buffer against risk and losses. Capital adequacy means that there is a sufficient level of capital required to absorb potential losses, while providing financial sustainability.

International standards of capital adequacy have been put forth through the Basle Agreement. These standards establish a minimum nominal amount of equity for an institution to operate and an adequate amount of equity to cover the risk of losses.

Capital risk ratio =	Equity + quasi-equity / Value of loans outstanding

- The capital risk ratio as it is formulated here, indicates the financial strength of the organisation based on the ability of its capital to absorb potential losses in the value of its assets.
- The Basle Agreement requires a capital risk ratio of 8%. For financial institutions in an early development phase we recommend a capital risk ratio of between 10% and 15%, depending on whether the institution mobilizes savings or not.

Assets at risk ratio =	Equity + quasi-equity / Balance of loans with any arrears

- This ratio is an indicator of the extent to which the portfolio in arrears is covered by the institution's own equity.

3.7 Liquidity (excel sheet 8)

The most immediate threat to a savings and credit institution arises from liquidity problems. If the institution is profitable, has adequate capital and a high quality loan portfolio, but at the end of the month has insufficient cash or liquid funds to meet its financial commitments, it will face severe difficulties. Excessive liquidity, on the other hand, is also undesirable because it implies that the institution will not obtain the highest possible return from its funds.

Quick ratio =	Liquid (current) assets / Current liabilities

- The quick ratio provides a measure of the extent to which current assets and liabilities are matched. Put simply, liquidity is about having sufficient liquid assets to be able to meet immediate liabilities. Cash is the most obvious liquid asset which an institution will hold.
- Any figure of significantly less than 1 implies that the liquidity of the institution is being adversely affected by late payers (ODA-DFID, 1998). It could also be that the liquidity management (or placement policy) is deficient.

Liquidity ratio =	$\frac{\text{Liquid (current) assets}}{\text{Total volume of deposits}}$

- This ratio is most relevant for institutions which mobilize savings. It shows the ability of the institution to meet its obligations to repay depositors. Central banks impose minimum values on this ratio.

3.8 Institutional sustainability (excel sheet 9)

The indicators to monitor the institutional sustainability of savings and credit operations refer to the continuity of staff, the investment made by the institution in the training of its staff and the number of persons dedicated to the internal audit of savings and credit operations. An external audit should be done every year.

Personnel turnover =	$\frac{\text{Number of staff renewals}}{\text{Total initial staff number}}$

- This indicator will provide information on whether the personnel of the institution is durable and if investment in education is profitable.

Personnel development	$\frac{\text{Total amount of money spent on staff training}}{\text{Administrative costs}}$

- The amount spent refers to the period evaluated.

III. GLOSSARY OF TERMS USED TO ELABORATE THE MONITORING RATIOS

Administrative costs	Non-financial expenses directly related to the provision of financial services (ex.: depreciation, rent, utilities, supplies, advertising, transportation, staff training, etc.). Excludes personnel costs.
Amount refinanced:	Value of loans that have been refinanced during the evaluated period.
Amount rescheduled:	Value of loans that have been rescheduled during the evaluated period.
Amount written off:	Value of loans that have been determined non-recoverable and have been written-off the balance sheet. Both the appropriate line in the balance sheet and the loan loss reserve are reduced by the amount written off.
Average amount of … :	Sum of amounts of …… at the end of each month/quarter/semester in the period divided by the number of months/quarters/semesters in the period.
Average amount of loans outstanding:	Sum of values of loans outstanding at the end of each month/quarter/semester in the period, divided by the number of months/quarters/semesters in the period.
Average size of disbursed loans:	Total disbursed portfolio divided by the number of disbursed loans during period.
Average term of disbursed loans:	Sum of terms of loans disbursed divided by the number of disbursed loans during period.
Average value of accounts:	Total balance of voluntary savings accounts over the number of accounts.
Balance of loans with any arrears	Total remaining value of outstanding loans whereof one or more instalments are in arrear at the end of the period evaluated.
Balance of loans with *one* and *x* days arrears:	Total remaining value of outstanding loans whereof one or more instalments are in arrear of at least *one* and *x* days at the 31st of last month of period evaluated.
Current liabilities:	Liabilities or debts which will become due within one year (short-term debt + short term savings + loan security fund + other restricted savings).
Equity:	Capital of the institution or its own money (contributed capital or donations +

	shareholder's capital + accumulated surplus/deficit + current surplus/deficit).
Financial costs:	Interests paid on funds (including savings).
Financial income:	Interests received on loans + interests on investments + commissions on loans + penalty interest and fees.
In-kind subsidy adjustment:	Difference between what the MFI is actually paying for the good or service and what it would have to pay for the same good or service on the open market. Examples: computers, technical assistance, free services of a manager, etc.
Interest subsidy:	(Market interest rate – interest rate on concessional loans) * value of concessional loans outstanding.
Liquid (current) assets:	Assets which are expected to become liquid within one year (cash and bank current accounts + interest bearing short-term deposits + value of loans outstanding – loan loss reserve + other current assets).
Net income from operations:	Operational income – (operational costs + financial costs).
Non-performing assets	Assets that are not generating any income (land, buildings, machinery, collaterals, etc.)
Number of active borrowers:	Number of borrowers with a loan outstanding at the 31st of last month of period evaluated.
Number of first-time loans:	Number of loans, which have been disbursed to new clients, during the period.
Number of staff renewals:	Number of existing posts which have been replaced by a new person during the period under evaluation.
Operational costs:	All types of costs generated by operations and needed to run the organisation. Includes personnel and administrative expenses. Excludes financial costs.
Operational income:	All type of incomes (excluding grants) generated by operations (or performing assets). Additionally to financial income, includes other operating revenues generated from other non-credit financial services (membership fees, ATM card fees, transfer fees, insurance, etc.). May also include net foreign currency gains/(losses).
Performing assets:	Assets that are being used for income generation (cash, bank deposits, loan portfolio, long term investments), in contrast to those lying still (non-performing).
Personnel costs:	Includes staff salaries, bonuses and benefits, as well as employment taxes incurred by the institution. Does not include training costs, which are reported in administrative costs.
Preferential shares:	As opposed to ordinary shares, the preferential shares give special rights to its owners (for example, more votes).
Provision for loan losses:	The amount required to be added to the loan loss reserve to maintain an adequate level given a conservative estimate of bad loans within the current portfolio.
Quasi-equity:	Total value of long term concessional loans at the end of evaluated period.
Refinanced loans:	Loans that have been disbursed to enable repayment of prior loans by clients who otherwise would have been unable to pay the originally scheduled instalments.
Rescheduled loans:	Loans whose terms of payment have been extended during the period under consideration.
Reserve for possible losses:	The amount set aside to cover future losses of the loan portfolio. Recorded on the balance sheet as a negative asset. When the reserve is adjusted or created, it figures as a provision for loan losses on the income sheet.
Subordinated debt:	The creditor of that kind of debt allows the institutions to honour first the depositors in case of liquidity problems.
Total assets:	Total of the balance sheet (current + long-term assets).
Total disbursed portfolio:	Total value of loans disbursed during the period evaluated.
Total volume of deposits:	Deposits and savings accounts from clients in the institution at the 31st of last month of period evaluated.
Value of loans outstanding:	Total value of loans outstanding at the 31st of last month of period evaluated (amount currently owed to the organisation).

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