

Rural Loan Financial Indicator Ratios

The parameters used in loan analysis describe and compare the situation of a business or project. None in itself is complete but when several are used together, they provide a concise, useful, and quantifiable description of the financial situation. These analytical tools or indicators for loan analysis can be divided into five categories, which are: a) profitability, b) liquidity, c) solvency, d) repayment capacity and e) risk.

The following Annex provides a more complete set of loan analysis indicators than those presented in the Loan Analysis Module. These can be selectively applied as needed for more complex and complete analysis of loans.

A. **PROFITABILITY or RETURN**

Profitability indicators measure the capacity of the business to generate profit. They measure the general effectiveness and sustainability of the operations.

1. **Return on Investment (ROI)**- indicates the profitability and effectiveness of the business or activity as measured in comparison to the investment or total assets of the business. It is often important to know the **Return on Equity (ROE)**, which uses a similar calculation but substitutes Equity for Investment in the formula. For microenterprise programs, Return on Investment is preferred since activities with very limited owner equity can experience wide variations in the indicators.

$$\text{Return on Investment} = \frac{\text{Net Income (or profit)}}{\text{Total Assets}}$$

Recommendation: normal = 18%

minimum = 10% or whatever is the bank savings deposit rate;
for loan projects the minimum should be at least 5%
more than the annual effective interest rate

2. **Profit Margin** - is used to show the margin of net income or profit generated on sales over a specific period of time. In case of production activities, it is the net income in relation to the net sales income from the production. For retail or wholesale activities, the profit margin can also be seen as the “mark-up” charge above actual costs.

$$\text{Profit Margin} = \frac{\text{Net Income (or profit)}}{\text{Net Sales}}$$

Recommendation: normal = it varies according to the risk of the business activity and the sales “turnover”. It is best measured by comparing with other similar businesses

minimum = a level which is positive and is comparable to that of other similar businesses

3. **Profitability** - indicates the capacity of the business to generate profit in relation to costs. It is a simplified concept of the return to a project without taking into account the present value of the income and expense flows. It also does not take into account the differences in risk between business activities nor the velocity or rotation on investment, but it is very easy to use and calculate and suffices for most small projects.

$$\text{Profitability} = 1 - \frac{\text{Total Income}}{\text{Total Costs}}$$

Recommendation: normal = approximately twice that of savings deposit rates paid by a bank for similar period time in order to compensate for the normally higher risk of the investment

minimum = greater than the interest charged for loans for a similar period of time. For example, if the interest rate charged by the institution is 1% a month, then for a retail business with a monthly rotation of capital, the minimum would be 1% of monthly net profit. For an agricultural crop with an 8 month production cycle, the minimum profit level is 8% for the period.

B. LIQUIDITY

Liquidity (cash availability) measures indicate the capacity of a business to cover short-term debts with short-term or liquid assets. It is very important that projects and businesses do not experience problems of lack of available cash to meet its obligations.

4. **Liquidity Ratio** - indicates if a business will be able to fulfill its short-term debts and obligations (considered less than a year) with its available funds (cash and other funds which are readily convertible to cash.) Liquid assets include cash, checking accounts, savings, accounts receivable, inventory, etc. and short-term debts include accounts payable, notes and loans due within 12 months, etc.

The liquidity ratio must be more than 1.0 (100%) in order for the business to not experience short-term repayment problems. A business that lacks liquidity is not a stable business, even though it may be profitable.

$$\text{Liquidity Ration} = \frac{\text{Short-term Assets}}{\text{Short-term Debts}}$$

Recommendation: normal = 200%

minimum = 150% for any credit financed project

C. EFFICIENCY

Efficiency measures compare operational efficiency indicators and activities with other similar businesses.

5. **Inventory Velocity or Rotation** - is used for the analysis of sales and commercial activities that manage inventories of merchandise and supplies. Velocity indicators compare the cost of the inventory merchandise with the sales of inventory. For some business activities, such as the sale of newspapers or candy, the rotation is high and for others such as equipment manufacturers is low, which makes it necessary to only make comparative analysis among similar activities. This indicator does not apply for agricultural projects.

$$\text{Inventory Rotation} = \frac{\text{Cost of Sales (or Inventory Sold)}}{\text{Average Inventory}}$$

Recommendation: It is necessary to compare with similar businesses.

6. **Working Capital Turnover or Velocity** - is especially useful for analysis of microenterprises. The Working Capital refers to the capital in cash, bank or cooperative, accounts receivable, and inventory minus short-term debt. The velocity indicator relates the sales with the amount of working capital in order to know if the level of sales justifies the level of working capital of the business. It is an important concept in credit because the higher the level of capital rotation, the higher the level of efficiency of capital (and credit) use and the lower the risk.

In order to use the indicator in loan analysis, it is recommended that the business be analyzed in its present form with actual sales and working capital levels, and also analyzed taking into account the projected loan and its projected levels of sales and working capital.

$$\text{Working Capital Turnover} = \frac{\text{Working Capital after loan} \times 30 \text{ days}}{\text{Projected monthly sales}}$$

Recommendation: normal = varies according to the activity, but for microenterprises ought to be 30 days or less for retail and small production activities. For rural production, it is quite variable and often much lower.

D. SOLVENCY

Solvency indicators show the relation of debts to equity, or financial “leverage”. They are important in measuring the financial risk of a business.

7. **Debt to Equity Ratio** - is a common indicator used for all types of businesses. The ratio indicates the capacity of a business to repay or “cover” its debt obligations from its equity. For businesses whose activity has a higher risk, the relation of debt to equity should be lower. It is always necessary that the debt be lower than the equity and to recognize that in case of liquidation of a business, the re-sale value of the assets is almost always low.

In general it is better to have a low ratio. Never-the-less it is necessary to recognize that even though debt (credit) increases the level of risk, it also increases the profit and the return to equity when the business generates a profit.

$$\text{Debt to Equity Ratio} = \frac{\text{Total Debt}}{\text{Equity}}$$

Recommendation: normal = 50%

maximum = 75%

8. **Debt and Equity to Asset Ratio** - indicates the same relationship as the debt to equity ratio but is expressed in another form, which is preferred by some persons. As the ratio increases, the financial risk decreases.

$$\text{Debt and equity to Asset Ratio} = \frac{\text{Debt and Equity}}{\text{Assets}}$$

Recommendation: normal = 67%

minimum = 55%

E. REPAYMENT AND DEBT CAPACITY

Repayment indicators show the capacity of a business to repay a loan. It is important to know the Debt Capacity of a business. This is calculated using estimated measures whose results vary according to the velocity or rotation of the money invested, the investment risk, etc. The indicators give an approximation of the possibilities to periodically amortize a loan within experiencing major problems. Of the three indicators presented, the analyst must select the one that is most logical according to the available information and the given situation.

9. **Debt to Net Income Ratio** - is the loan amount (actual and requested) in relation to the estimated net business or family income (for microbusinesses), which is total family income minus total family expenses.

$$\text{Debt/Net Income:} = \frac{\text{Debt}}{\text{Net Income (family)}}$$

Recommendation: normal = 35% for production loans, housing loans and in general for projects that have periodic payments

máximo = 50% for small loans of low risk

$$\begin{aligned}
\text{Cash Flow Analysis =} & & & + \text{Initial Balance} \\
\text{(for each period)} & & & + \text{Project Income} \\
& & & + \text{Other Income that can be used} \\
& & & + \text{New Loans} \\
& & & - \text{Operational Expenses (excluding} \\
& & & \text{Depreciation)} \\
& & & - \text{Investments} \\
& & & - \text{Interest Payments} \\
& & & - \text{Loan Amortization} \\
& & & - \text{Gastos Familiares} \\
& & & = \text{Balance of the Period}
\end{aligned}$$

Recommendation: minimum = Positive projected balances for each period.

F. RISK

The indicators to measure risk are needed in order to know what effects that changes in price and production would have on a project.

- 13 **Breakeven Point (Fixed Expenses)** - it is the level of periodic sales that a business must have in order to “breakeven” or at least cover all costs. It estimated the minimum level of production needed to cover the fixed costs. In order to calculate the breakeven it is necessary to know the fixed costs (fixed personnel costs, rent, etc.) and/or know the variable costs (materials, direct production expenses, etc.)

$$\text{Breakeven Point:} \quad \frac{\text{Fixed Expenses}}{\text{Sales Price/Unit} - \text{Variable Expenses/Unit}} = \text{units} \\
\text{(Fixed Expenses)}$$

Recommendation: normal = to have an estimated production level of at least 1.5 times the level needed for breakeven, but taking into consideration adjustments due to risk
minimum = to have a production level 1.2 times breakeven point

- 14 **Breakeven Price** - indicates the minimum price needed by a business for its product in order to cover all its operational costs assuming a constant production level. It is especially useful for agricultural loans.

$$\text{Equilibrium Price:} \quad \frac{\text{Total Costs Totales}}{\text{Production Units}} = \text{price/unit} \\
\text{(Price Sensitivity)}$$

Recommendation: normal = 75-85% of the price used in the loan budgeting, and being even less as the relative production risk rises.

maximum = 90%

$$\text{EXAMPLE: } \frac{\$250/\text{hectare production cost}}{100 \text{ bags/hectare production}} = \$2.50/\text{bag}$$

- 15 **Production Equilibrium Point** - is used to know the minimum level of production required in order to cover all production costs at different levels of price of the product. It is often used in agricultural production and manufacturing.

Break Even Point: $\frac{\text{Total Costs}}{\text{Price/Unit}} = \text{units}$
(Sensitivity of Production)

Recommendation: normal = 75% of the production quantity used in loan budgeting, or less of there is more price risk

maximum = 90%

- 16 **Fixed Asset to Loan Ratio** - the relationship of the fixed assets of the business or group to the loan size indicates the security of loan recovery en case of default. It is recommended that the value of the fixed assets to be purchased with the loan be included in the analysis.

Fixed Asset to Loan Ratio: $\frac{\text{Fixed Assets After Loan}}{\text{Loan}}$

Recommendation: normal = 2-3 times

minimum = 2 as long as the client has other solid guarantees